

Lionville Laboratory, Inc. GRO ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID		LVL #	MTX	PREP #	COLLECTION	EXTR/P	REP ANALYSIS
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B17RT8		004	S	03LVJC18	12/07/03	N/A	12/18/03
B17RT8	•	004 MS	S	03LVJC18	12/07/03	N/A	12/18/03
B17RT8		004 MSD	S	03LVJC18	12/07/03	N/A	12/18/03
LAB QC:				* · · · · · · · · · · · · · · · · · · ·			
· · ·			•			•	
TBLKNS TBLKNS		MB1 MB1 BS	s s	03LVJC18 03LVJC18	N/A N/A	N/A N/A	12/18/03 12/18/03

Priloth



Analytical Report

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00 Date Received: 12-15-2003

GRO

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were analyzed according to Lionville Laboratory OPs based on SW-846 method 8015 for Gasoline Range Organics (GRO) on 12-18-2003. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LVLI's sample acceptance policy.
- 2. The sample was analyzed within required holding time.
- 3. The method blank was below the reporting limits for the target compound.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. The blank spike recovery was within acceptance criteria.
- 6. The matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels /

Laboratory Manager

Lionville Laboratory Incorporated

som\r\group\data\gro\tnu-hanford\0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

R:/SHARE/GCVOLATILE/GCVOLATILEGLOS.DOC

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

RFW Batch Number: 0312L369 Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1 B17RT8 B17RT8 B17RT8 TBLKNS TBLKNS BS Cust ID: 03LVJC18-MB1 03LVJC18-MB1 Sample 004 004 MS 004 MSD RFW#: SOIL SOIL SOIL SOIL SOIL Information Matrix: 1.00 1.00 1.00 1.00 D.F.: 1.00 UG/KG UG/KG UG/KG Units: UG/KG UG/KG 106 110 85 80 93 % Fluorobenzene 30 U 30 U 107 Gasoline Range Organics (GRO) 99 96

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Ar. lich

Report Date: 01/15/04 16:5&

(6) HOA BNA PIPES From Will DIG Nich Custody Transfer Record/Lab Work Request Page _______ of _______ Lionville Laboratory Use Only 03/26369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS DEFEHIL Client TNUttunford F03-025 Refrigerator # Liquid Est. Final Proj. Sampling Date ____ #/Type Container AGI, AGI, AGI, BAGI, AGI, Project # 1(343.606.001-9999-00 BAN Solid. Llauid Project Contact/Phone # __ Volume Lionville Laboratory Project Manager O. John Son 120 40 250 250 120 500 -1 Solid 40 ac spec Del 500 TAT 30 days Preservatives **ORGANIC** INORG **ANALYSES** Date Rec'd /2/15/03 Date Due 1-14-03 REQUESTED Lionville Laboratory Use Only Matrix MATRIX QC. CODES: \pm Date Time Chosen Matrix Client ID/Description S - Soil Collected Collected SE - Sediment SO - Solid MS MSD SL - Sludge W - Water 001 BITR45 12/5/03 1500 O - Oil 12/6/03 1545 1002 BITRT3 A - Air DS - Drum 1545 Solids BITRIG DL - Drum 12/7/03 1030 Liquide BITRT8 L - EP/TCLP 140 Leachate 005 BITRUS WI - Wipe 12/10/03 1245 X - Other 006 BITRW4 F - Fish 12/7/03 1030 007 BITRV2 DATE/REVISIONS: Special Instructions: SAF # FO3 -025 (2-19-0) 1. Add 08015 to -004 Lionville Laboratory Use Only Run Matrix ac Samples were: Tamper Resistant Seal was: 1) Shipped ____ or 1) Present on Outer Hand Delivered _____ Package Y or N MET (): RCRA + Sb. Be, Bi, Cu, Ni 2) Unbroken on Outer Package Y or N 10 0 = CI. F. NO. , NOL , POY SOY 2) Ambient or Chilled 3) Present on Sample Y or N 3) Received in Good Condition Y or M' 4) Unbroken on 4) Samples Sample Y or N Properly Preserved or N **COC Record Present** Received Relinquished Relinquished Received Discrepancies Between Date Time Date Time Upon Sample Rec't by Samples Labels and 5) Received Within Y or N COC Record? Y or N 12/5/03 0950 Them ORIGINAL FEDEX Holding Times "COMPOSITE NOTES: Temp. _

FLUOR Hanford Inc.	CE	NTRAL PLATEAU (CHAIN OF	CUSTOD	Y/SAMPL	E ANA	LYSIS R	EQUEST		F03	-025-001	Page 1	of <u>1</u>
Collector POPE / PFISTER / H	ughes Com	pany Contact ENT, STEVE	Telephoi 373-50				Project C TRENT,	Coordinator SJ	Pric	e Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil		oling Location 6-B-58 (0.5 ft)	,				SAF No. F03-025		Air	Quality		45	Days
Ice Chest No. ERC 02 3	Field	Logbook No.		COA 119143ES	10		FEDER	f Shipment KAL EXPRES					
Shipped To 1970 10-24-03 EBERLING SERVICES (Formerly TMA)	offsi	te Property No.	A04	0.05	9		Bill of L	ading/Air Bi	1 No.	SEZ	= OSF	<u>'</u> د	
POSSIBLE SAMPLE HAZARDS/REMAR		Preservation	Cool 4C	Cool 4C									
		Type of Container	aG	aG									
Special Handling and/or Storage		No. of Container(s)	1									,	
		Volume	60mL	60mL									
SAMPL	E ANALYSIS		Pesticides - 8081	Chloro- Herbicides - EPA8151									
										:			
Sample No. Matrix				e de les di					246	(hidealni		172271 (54)	r gaz
B17RY5 SOIL	12-5-	3 /5:00				<u> </u>		7	16	ΓΟ	B 171	RYG	
			1		•	-		·					
						 							
			-										
CHAIN OF POSSESSION		nt Names		SPE	CIAL INSTE	RUCTIO	NS					'	Matrix *
	e 16:00 Received By/St		ate/Time 1-5-3	:00									S=Soit SE=Sediment
Relinquished By/Removed From 6de/Tim MO-026 Fridge #1 12/8	6 1230 Received By/St	ored in D Leunas Stray The	ate/Time	1230					٠	·	- - - 1.		SO=Solid SI=Shidge W = Water O=Oil
Relinquished By/Removed from Date/Tim Relinquished By/Removed From Date/Tim	9/03 Bound	5-19- 12/08	ate/Time <u>インろ (と</u> ate/Time	R	sonnel not a	iples fro	ท 3728			Ŀ	•		A=Air DS=Drom Solids DL=Drom Liquids T=Tissue
5)6A(EN)12-12-03	FED	<u>ex</u>	477	Re	f# <u>//A</u> on/	2/12	200	• .					WI=Wipe L=Liquid V=Vegetation
FOREY 12/15/03	0950 Per		ate/Time									-	X=Other
Relinquished By/Removed From Date/Tim	Received By/S	torfd In D	ate/Time		· · · · · · · · · · · · · · · · · · ·	•							}
LABORATORY Received By SECTION			Ti	itle		÷ .						Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION					Disp	osed By		·		• .		Date/Time	
A-6003-618(03/03)		at See											

FLUOR Hanford Inc.	CENTRAL PLAT		F CUSTODY/SAMPLE AN		F03-025-003	Page 1 of 1
Collector PODE PROTES HUMES	Company Contact TRENT, STEVE	Telepho 373-5		Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (17.5 - 20	ſl)		SAF No. F03-025	Air Quality 📋	45 Days
Ice Chest No. ERC 02 - 501	Field Logbook No.		COA 119143ES10	Method of Shipment FEDERAL EXPRESS		
Shipped To TWO 10-29-03, Recra	Offsite Property No.	A040	059	Bill of Lading/Air Bill	No. SEE OS	> <u></u>
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservati	Cool 4C	None			
	Type of Cont	tainer G	G/P			
Special Handling and/or Storage	No. of Contai	iner(s)	1/			
	Volume	250mL	250rL			
SAMPLE ANALYSIS		See item (1) i Special Instructions.	Special			
Sample No. Matrix * Sa	mple Date Sample	Time (/////				dr. Sies
B17RT3 SOIL 12	-6-3 15:4	45 -			776 70	317215
	-6-3 15:	45 /			715 70	B12875
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
CHAIN OF POSSESSION	O. B. L. H.					<u> </u>
Relinquished By/Removed From Date/Time/800 Reco	Sign/Print Names ived By/Stored In ived By/Stored In ived By/Stored In	Date/Time	range organics from the WTI 230 (1) Chromium Hex - 7196; 1	pH within 24 hours of sample r PH-D analysis. See SAF COC NO2/NO3 - 353.2; Sulfides - 90	eccipt. The laboratory is to repor Comments for holding time issue: 030; Oil & Grease - 413.1 un-228): Technotom-99; Isotopic	S. S=Sediment SE=Sediment SO=Solid Si=Shudge
Relinquished By/Removed From Date/Time /245 Reco	ived By/Stored In	Date/Time (2/09/03 17) Date/Time	(Thorium-232), Tridian - H	3; Carbon-14, Strentium-89,9 0	- Total St Pp 12/2/3	G≃Oil A-Air DS≃Drom Solid DL=Drom Liqu T=Tissue
SJGALE S/1212 03 1000 F	ived ByrStored In	Date/Time	Personnel not availat Relinquish samples t	from 3728		WI=Wipe L=Liquid V=Vegetation X=Other
	ived By/Stored/tyl	Date/Time	Ref#///on_12/_			
LABORATORY Received By SECTION		T	tle Anna Anna Anna Anna Anna Anna Anna Ann		E	Date/Time
FINAL SAMPLE Disposal Method			Disposed By			

	d Inc.	CI	ENTRAL PLATEAU (CHAIN OI	CUSTOD	Y/SAMPLE A	NAL	YSIS REQU	EST	F03	-025-004	Page 1	of.
Collector D	Stell High	S Com	pany Contact RENT, STEVE	Telepho 373-5				roject Coordi RENT, SJ	nator	Price Code	8N	Data Ti	
Project Designation 200-LW-1/LW-2 Characteriz	ration - Soil	Sam 2	pling Location 16-B-58 (22.5 - 25 ft)	· :				AF No. 03-025		Air Quality		45	Da
Ice Chest No.	2501	1 1	Logbook No.		COA 119143ES	10		lethod of Ship FEDERAL E.	XPRESS				
Shipped To This 10-79 -EBERLINE SERVICES (Fo	2-03 Pecro	のffs	ite Property No AOY	0 05	9		В	Bill of Lading/	Air Bill	^{No.} ८ <i>टह</i>	980	er*	
POSSIBLE SAMPLE HAZA	ARDS/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None				
Constant Washington	·	* *	Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P			
Special Handling and/or S	storage		No. of Container(s)	3	1	3	1	ı	ì				
			Volume	40mL	120mL	40mL	120mL	250inL	500ml	L 500mL			
	SAMPLE ANAL	YSIS		VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Clycols, & Ketones - 8015 (1-Butanol, Ethylene glycol)	Bs - 8082	2 See item (2) in Special Instructions.	See item (3 Special Instructio	Special			
Sample No	Matrix *	Sample Date	Sample Time										
B17RT8	SOIL	12-7-	3 10:30	سنن						/	7167	U'B17	R
					1 10 to 12								_
			,					nnel not avail					_
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1													
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CHAIN OF POSSESSIC Relinquished By/Removed From Relinquished By/Removed From SHE T(QNEY KMA) Relinquished By/Removed From	Date/Time 160 Date/Time 1330 Late/Time 1330 Late/Time 1330 Date/Time 1330 Date/Time 1330 Date/Time 1330 Date/Time 1330 Date/Time 1330	Received By/St Received By/St Received By/St Received By/St Received By/St Received By/St	ich RMA Fridge Direction And Market The property of the prope	ate/Time ate/Time ate/Time ate/Time	The la range (1) Se Diesel kerose (2) IC ICP M 7471 - (3) IC Cyanic (4) The land th	IAL INSTRUC boratory is to analy organics from the V emi-VOA - 8270A (Range - WTPH-D one range); TPH-G: P Metals - 6010A (Sup (CV) C Anions - 300.0 (C de - 9010; pH (Soil	FIONS ze pH w VTPH-E TCL) { TCL) { Total p soline F Supertrace x hloride,	A On Z / B on Z / B oithin 24 hours of D analysis. See S Phenol); Semi-V petroleum hydroc Range - WTPH-C ace) (Arsenic, Bi Add-On) (Antim	f sample re AF COC (OA 827 arbons - d arium, Cac ony, Beryl	ceipt. The laborat Comments for hold 0A (Add-On) {Tri iesel range, Total p Imium, Chromium, lium, Bismuth, Co	ling time issues. ibutyl phosphate petroleum hydra , Lead, Seleniur pper, Nickel}; l	e); TPH- ocarbons - m, Silver); Mercury -	S=S0 SE=S SO=S SI=S W = O=O A=A DS=I DL=i WI=Y L=LI V=V
CHAIN OF POSSESSIC Relinquished By/Removed From AND COLOR STORM Relinquished By/Removed From SHE T(Q Q KMAF Relinquished By/Removed From AND COLOR STORM Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From SUCON STORM Received By/Removed From SUCON STORM SUCON SUCON STORM SUCON ST	Date/Time 160 Date/Time 102 Pate/Time 103 Pate/Time 103 Date/Time 100 Date/Time 100 Date/Time 100 Date/Time 100 Date/Time 100	Received By/St	ored In Driver Pridge Droped In Broad In B	12-7-3 ate/Time 13 12-9-0 ate/Time -03 143 ate/Time	The la range 3	boratory is to analy organics from the V emi-VOA - 8270A (1 Range - WTPH-Done range); TPH-Go CP Metals - 6010A (5up (CV) CAnions - 300.0 (C de - 9010; pH (Soil	FIONS ze pH w VTPH-E TCL) { TCL) { Total p soline F Supertrace x hloride,	A On Z / B on Z / B ovithin 24 hours of D analysis. See S Phenol); Semi-V petroleum hydroc Range - WTPH-C and Carsenic, B Add-On) (Antim	f sample re AF COC (OA 827 arbons - d arium, Cac ony, Beryl	ceipt. The laborat Comments for hold 0A (Add-On) {Tri liesel range, Total p Imium, Chromium, lium, Bismuth, Co	ling time issues. ibutyl phosphate petroleum hydro , Lead, Seleniur pper, Nickel}; l }; Ammonia - 3.	e); TPH- ocarbons - m, Silver); Mercury -	Missessessessessessessessessessessessesse

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FLUOR Hanford	Inc.	CEN	TRAL PLATEAU C			Y/SAMPLI	E ANA	 		<u> </u>	F03	-025-005	Page 1	of 1
Collector JODO DA	Spec Highe	S Compa	nny Contact NT, STEVE	Telephor 373-56	ne No. 589			Project Co TRENT, S.		Pr	ice Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterizate	tion - Soil	Sampli 216-	ing Location -B-58 (27.5 - 30 ft)					SAF No. F03-025	· · · · · · · · · · · · · · · · · · ·	Ai	r Quality		45	Days
Ice Chest No. ERC	02501	Field L	ogbook No.		COA 119143ES	10		Method of FEDER	Shipment AL EXPRES	S			· · · · · · · · · · · · · · · · · · ·	•
Shipped To 10-2 EBERLINE SERVICES (Form		Offsite	Property No.	040	05	9		Bill of La	ling/Air Bil	l No.	SEE	OSP	د ا	
POSSIBLE SAMPLE HAZAF			Preservation	Cool 4C	None									
Special Handling and/or St	orage		Type of Container	G	G/P									
Special Mandanie and Or	or age	,	No. of Container(s)	ı	1									
			Volume	250mL	250 hL									
	SAMPLE ANALYS	SIS		See item (1) in Special Instructions.	See itym (2) in Special Instructions.	*								
Sample No.	· Matrix *	Sample Date	Sample Time		1				100		100		II (UP-IN)	
B17RV5	SOIL	12-7-	3 14:10	X					71	<u> </u>	TO	B17	Rリフ	
	•													
		•												
CHAIN OF POSSESSION Relinquished By/Removed From Moscy Ref Relinquished By/Removed From Grey Thomas July 12-12 Relinquished By/Removed From Dicyte All All 12-12 Relinquished By/Removed From Color Relinquished By/Removed From Color Relinquished By/Removed From Color Relinquished By/Removed From Color Relinquished By/Removed From	Date/Time /6:40 Date/Time /230 12/8/03 Date/Time /245 03 0730 Date/Time	Received By/Stor	ed in Da Adge #1 /2-7 ed in Da Amas X ag /aca Total Da Total Da Total Da Total Da Total Da Adge i 2 (os io ba ed in Da Adge i 2 (os io ba) ed in Da	te/Time	7 The l range 23 p (1) (22) [The state 25]	CIAL INSTR aboratory is to a e organics from Chromium Hex- Nickel-05, Gam vium-232), Trit ersonnel not a celinquish sam ef # / A on /	analyze ; the WTi - 7196; ti ma spec tium - 11: availab	pH within 24 h PH-D analysis. NO2/NO3 - 35: Raddium {Ru s; Carbon-14; t	See SAF COO .2; Sulfides - '	C Com 9030; Hum-2 :	ments for hol Oil & Grease 28}, Techneti	ding time issue: - 413.1 um-90; Isotopis	Tho rium -	Matrix S=Soil SE=Sedimer SO=Solid SI=Studge W = Water O=Oil A=Air DS=Drum I T=Tissue WI=Wipe L=Liquid V=Vegetatio X=Other
LABORATORY Received By		1		Tit	ile							I	Date/Time	1
SECTION	the state of the s		the state of the s											
FINAL SAMPLE Disposal Met							sed By					· · · · · · · · · · · · · · · · · · ·	Date/Time	

2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Inc.	. N. LE	ENTRAL PLATEAU C	CHAIN OF	CUSTOD	Y/SAMPL	E ANA	LYS	IS REQU	EST		F03-	-025-008	Page <u>1</u>	of <u>1</u>
Collector 100 PH	des l'Aldh	A C Wycom	pany Contact RENT, STEVE	Telepho 373-5	ne No.			Proj	ect Coordi NT, SJ		Price	Code	8N		ırnaround
Project Designation 200-LW-1/LW-2 Characterizat	ion - Soil		pling Location 6-B-58 (97.5 -100 ft)					SAF F03-			Air Ç	Quality (45	Days
Ice Chest No. URC 03	2 501	Field	Loghook No. NF 356 1		COA 119143ES	10		Metl FE	hod of Ship EDERAL E	ment XPRESS	-	•			
Shipped To TOTO O BERLINE SERVICES (Form		Offsi	te Property No.	040	057			Bill	of Lading/	Air Bill	No. 5	S& 5	037	><	
POSSIBLE SAMPLE HAZAR			Preservation	Cool 4C	None				4						
Special Handling and/or St	orage		Type of Container	G	G/P										
			No. of Container(s)	1	1										
			Volume	250mL	250mL										
	SAMPLE ANAI	LYSIS		See item (1) in Special Instructions.	Special instructions.					·					
					No. of the										
Sample No.	Matrix *	01- D-4-	C) 1 PH	avaint state and executive and	NA SECURIO E CONTRACTORISMO	C STANCE OF BUILDING WASHINGTON	SA ESTOR PHAILTERS	100000		a delto supravista v	SHOW AS COURSE	at 600 A collection of the	SAN ASSESSMENT STREET, NAME OF STREET, SAN ASSESSMENT OF STREET, SAN A	NAME OF THE OWNER, AND ADDRESS OF THE	SE DESCRIPTION NAMES OF STREET
Sample 190;	Manix	Sample Date	Sample Time		7/5等金			100		1000	22 P	2022		ar leviting the	
-	SOIL	12-10-0			7							TIE	70 j	317RU	16
		 		X								71E	70 Î	317Ru	16
		 		X								TIE	70 j	317Ru	36
B17RW4		 		X	7							TIE	I OT	317Ru	J.6
-		 		X	7							716	σ i	3 17 Ru	6
	SOIL	1)-10-0	3 1245	×		CIAL INSTI	RUCTIO	DNS					·		J 6 Matrix *
CHAIN OF POSSESSION Relinquished By/Removed Flan	SOIL N Date/Time 151		3 1245 int Names lored In # 1 MO-DU	1000	75 The I	aboratory is to organics from	analyze p	H with H-D ar	nalysis. See (SAF COC	eceipt. T	he laborate	ory is to rep	oort kerosene	Matrix * S=Soil SE=Sedinca
CHAIN OF POSSESSION Relinquished By/Removed F 411 Belinquished By/Removed from	SOIL Control Soil Soil	Sign/Pri Sign/Pri Sign/Pri Sign/Pri Sign/Pri Sign/Pri	3 1245 int Names lored In # 1 MO 24 12 lored In C# 1 MO 24 12	1003 ate/Time 12111	The I range (1) CO (2) 1	aboratory is to	analyże p i the WTP: : - 7196; N n ma Spec-	H with H-D ar IO2/NC - Radio	nalysis. See (03 - 353,2; Si am (Radians-	SAF COC ulfides - 90 226, Radi t	eccipt. T Commen 030; Oil &	The laborate ts for hold & Grease - Technetin	ory is to rep	oort kerosene ues.	Matrix *
CHAIN OF POSSESSION Relinquished By/Removed F 411 Relinquished By/Removed from	SOIL Control Soil Soil	Sign/Pri Sign/Pri Sign/Pri Sign/Pri Sign/Pri Sign/Pri	3 1245 int Names lored In # 1 MO 24 12 lored In C# 1 MO 24 12	12-11-02	7000 (1) C (2) 1 (1) C (2) 1 (Tho	aboratory is to organics from thromium Hex lickel-63: Gan	analyże p i the WTP: : - 7196; N n ma Spec-	H with H-D ar IO2/NC - Radio	nalysis. See (03 - 353,2; Si am (Radians-	SAF COC ulfides - 90 226, Radi t	eccipt. T Commen 030; Oil &	The laborate ts for hold & Grease - Technetin	ory is to reping time issued 413.1 m-99; Isolo	oort kerosene ues.	Matrix * S=Soil SE=Sediment SO-Soild SI=Shudge W = Water O=Oil A=Air DS=Drum Soil DIDrum Liqu
CHAIN OF POSSESSION Relinquished By/Removed From Linquished By/Removed from Linquished By/Removed from Relinquished By/Removed From Relinquished By/Removed From	Date/Time 15/10/15/15/15/15/15/15/15/15/15/15/15/15/15/	Sign/Pri S Received By/Si Received By/Si N Received By/Si Received By/Si Received By/Si	int Names ored in A 1245 ored in or	ate/Time 211-date/Time 2-11-date/Time	715 The I range (2) 1000 (2) 1	aboratory is to organics from Chromium Hex Nickel-63: Ganrium-2323; Tri	analyze p the WTP: - 7196; N mma Spec- itium - H3;	oH with H-D ar IO2/NC - Radio ; Carbo	nalysis. See 9 03 - 353,2; Si am (Radinns- on 14; Stronti	SAF COC ulfides - 90 226, Radi t	eccipt. T Commen 030; Oil &	The laborate ts for hold & Grease - Technetin	ory is to reping time issued 413.1 m-99; Isolo	oort kerosene ues.	Matrix * S=Soil SE>Solincat SO=Solidge W= Water O=Oll A=Air DS=Drum Solid
CHAIN OF POSSESSION Relinquished By/Removed From H 100 # 100 - 020 Belinquished By/Removed From H 100 # 100 - 020 Relinquished By/Removed From	Date/Time 16/15/16/15/16/16/16/16/16/16/16/16/16/16/16/16/16/	Sign/Pri Received By/Sign/Sign/Sign/Sign/Pri Received By/Sign/Sign/Sign/Sign/Sign/Sign/Sign/Sign	ant Names Fored In Fored	ate/Time 211-date/Time 2-11-date/Time	1000 (1) C 1000 (2) L 1000 (The	aboratory is to organics from thromium Hex lickel-63: Gan	analyze p the WTP: -7196; N mma Spec- itium - H3; t avaitable amples fr	oH with tH-D at tO2/NC - Radic ; Carbo te to om 37	nalysis. See 9 03 - 353,2; Si am (Radium- on-14; Stronti 728	SAF COC ulfides - 90 226, Radi t	eccipt. T Commen 030; Oil &	The laborate ts for hold & Grease - Technetin	ory is to reping time issued 413.1 m-99; Isolo	oort kerosene ues.	Matrix * S-Soil SE-Sediment SO-Solid SI=Studge W = Water O=Oil A-Air DS-Drum Salid DL-Drum Liqu T-Tissue Wi-Wiyp
CHAIN OF POSSESSION Relinquished By/Removed From HOUTH MO-02U Belinquished By/Removed From HOUTH MO-02U Relinquished By/Removed From KEF 3 5 3 7 2 8 12 Relinquished By/Removed From	Date/Time 16/10/2-16-15/2-16-15/2-16-15/2-16-2	Sign/Pri Received By/Sign/Sign/Pri Received By/Sign/Sign/Sign/Sign/Sign/Sign/Sign/Sign	ant Names Fored In Fored	ate/Time 12-11-02 ate/Time 12-11-02 ate/Time	1000 (1) C 1000 (2) L 1000 (The	aboratory is to organics from the chickel-63: Gamium Hex lickel-63: Gamium-232}: Tri ersonner no Relinguish sa	analyze p the WTP: -7196; N mma Spec- itium - H3; t avaitable amples fr	oH with H-D ar IO2/NC - Radic - Carbo ie to om 37	nalysis. See 9 03 - 353,2; Si am (Radium- on-14; Stronti 728	SAF COC ulfides - 90 226, Radi t	eccipt. T Commen 030; Oil &	The laborate ts for hold & Grease - Technetin	ory is to reping time issued 413.1 m-99; Isolo	oort kerosene ues.	Matrix * S=Soil SE=Sediment SO=Solid SI=Shudge W = Water O=Oll A=Air DS=Drum Solid DL=Drum Liqu T=Tissue Wi=Wipe L=Liquid V=Vegetation
CHAIN OF POSSESSION Relinquished By/Removed From H 100 # 100 - 020 Belinquished By/Removed From H 100 # 100 - 020 Relinquished By/Removed From Relinquished By/Removed From L 5 3 5 3 7 2 8 2 Relinquished By/Removed From	Date/Time 16/10/10/10/10/10/10/10/10/10/10/10/10/10/	Sign/Pri Received By/Sign/Sign/Pri Received By/Sign/Sign/Sign/Sign/Sign/Sign/Sign/Sign	ant Names Fored In Fored	ate/Time 12-11-03 ate/Time 12-11-03 ate/Time ate/Time ate/Time	1000 (1) C 1000 (2) L 1000 (The	aboratory is to organics from the chickel-63: Gamium Hex lickel-63: Gamium-232}: Tri ersonner no Relinguish sa	analyze p the WTP: -7196; N sma Spec- itium 113; t availabl amples fr	oH with H-D ar IO2/NC - Radic - Carbo ie to om 37	nalysis. See 9 03 - 353,2; Si am (Radium- on-14; Stronti 728	SAF COC ulfides - 90 226, Radi t	eccipt. T Commen 030; Oil &	The laborate ts for hold & Grease - Technetin	ory is to reping time issued 413.1 m-99; Isolo	oort kerosene ues.	Matrix * S-Soil SE-Sediment SO-Solid SI-Shudge W = Water O-Oil A-Air DS-Drum Solid DL-Drum Liqu T-Tissue Wi-Wipe L-Liquid V-Vegenation

FLUOR Hanfor	d Inc.	CEN	TRAL PLATEAU C	CHAIN OF	CUST	ODY	//SAMPL	E ANA	LYSIS F	REQUES	Т	F03-	-025-044	Page 1	of 1
Collector HDP/H	15/0 / 1/00	Compa TRE	ny Contact NT, STEVE	Telepho 373-5		:			Project (TRENT,	Coordina(SJ	er Pr	ice Code	8N	Data Tu	
Project Designation 200-LW-1/LW-2 Characteriza	ation - Soil		ng Location B-58 (22.5 - 25 ft)	:				- ·	SAF No. F03-025		Ai	r Quality		45	Days
Ice Chest No. ERCO	2501	Field L	ogbook No. UNF - 10 - 351 o-		COA 11914		0			of Shipme RAL EXP		•		. : .	
Shipped To TYY 510-2 EDERLINE SERVICES (For	()		B	040	05	9			Bill of L	ading/Air	Bill No.	0370	•		
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	Non	1									
Special Handling and/or S	torage		Type of Container	G	G/F	1									
		No. of Container(s)	250mL	250n				·					-		
			Volume	See item (1) in											
	SAMPLE ANAI		Special Instructions		al :										
Sample No.	Matrix *	Sample Date	Sample Time												
B17RV2	SOIL	12-7-	3 10:30	X	/							The	700 %	1786	1/
			·		-			ļ							
					<u> </u>										
						·····		ļ			· . • · · · · · · · · · · · · · · · · ·			 	
CHAIN OF POSSESSIO		Sign/Print					IAL INSTR			 	···························				Matrix *
Relinquished By/Removed From Cax'n WKua She Relinquished By/Removed From SHE Trailer KMA F	Date Time 122	Received By/Store	Her RMA Fridge Bod In Count Am MOUNT	tte/Time	30 3-03	range ((1) Cl (2) N	organics from fromium Hex skel-63; Gam	the WTP - 7196; N	H-D analysi IO2/NO3 - 3 - Radium (F	s. See SAF 353.2; Sulfic Cadium-226	COC Com les - 9030; Padium 2	ot. The laborate iments for hold Oil & Grease - 28), Technotic	ling time issue - 413.1	s	S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil
Retinguished By Romeyed Frem	Phonon Date Time	Received By/Store		<u>03 145</u>		(I IIOI i	um-232); Trit	113	, 6010001-11	, on o mum	69,90 TC	Par Par	0 12/	2/3	A=Air DS=Drum Solids DL=Drum Liquids
Reinquicked By/Removed Film 2	4 D 11-03 100	Recgeived By Store	thison anthu	tte/Tinne	13									·	T=Tissae Wi=Wipe L=Liquid V=Vegetation
Ton when and	WOODIN	Received By/Store	73728 L	J-11-0	3	Rel	onnel not a inquish sam	ples fro	ก 3728						X=Oilter
Relinquished By/Removed From	Date/Time	Received By/Store		ite/i ime		 e.	# <u> </u>	<u> </u>	<u>/ e 7</u>						
LABORATORY Received By SECTION Rel	by: PedEx	13/15/6		c.by	tle P	en	n						. 1	Date/Time	
FINAL SAMPLE Disposal Mo	L SAMPLE Disposal Method							osed By				· · · · · · · · · · · · · · · · · · ·		Date/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD Date: Purchase Order / Project# / SAE# / SOW# / Release #: F03-025 LvLI Batch #: Sample Custodian: 03/21369 NOTE: EXPLAIN ALL DISCREPANCIES 792389388227 Airbill# Samples Hand Delivered or Shipped Custody seals on coolers or shipping Comments □ No ☐ No Seals container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC - 02 - 501 1.5 Temp 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, ⊿ Yes □ No □ No Seals signed and dated? 7. coc signed and dated? ☐ Yes □ No · 🗆 Yes Sample containers are intact? □ No All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No

13. VOA, TOC, TOX free of headspace?

Short holds taken to wet lab?

12. Samples received within hold times?

11. Samples properly preserved?

□ Yes

☐ Yes

E Yes

- / /

14. QC stickers placed on bottles designated by client?

⊔ Yes

Ø N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

1 Yes

. ___

 Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) □ Yes □ No

□ No

□ No

□ No

□ No

□ No

EI No Discrepancies



Eionville Laboratory, Inc. 8015 ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03 LVL LOT # :0312L369

CLIENT	ID			LVL	#		MTX	PREP #	COLLECTION	EXTR/PREP		ANALYSIS
	•		- '						- <u> </u>		•	
B17RT8				004			S	03GCX011	12/07/03	12/19/03		12/19/03
B17RT8				004	MS		S	03GCX011	12/07/03	12/19/03		12/19/03
B17RT8				004	MSD		S	03GCX011	12/07/03	12/19/03		12/19/03
LAB QC:												
						. · · · .						
	100		1.12					A		-0 (-0 (00		70 (40 (00
BLK		-		MB1			S	03GCX011	N/A	12/19/03		12/19/03
BLK		*	100	MB1	BS		S	.03GCX011	N/A	12/19/03		12/19/03

Hilala



Analytical Report

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00 Date Received: 12-15-2003

GC VOA

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were prepared and analyzed on 12-19-2003 according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures. The prepation procedure was based on method 3580A (waste dilution -1 g into 5 mL water) and the extracts were analyzed based on method 8015 for client specified target compound Ethylene Glycol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The sample was analyzed within required holding time.
- 3. The method blank was below the reporting limit for the target compound.
- 4. Surrogates are not currently employed in the methodology.
- 5. The blank spike recovery was within acceptance criteria.
- 6. The matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations were within acceptance criteria.
- 8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\gcsc\tnu\0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.



GLOSSARY OF GC SCAN DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- **BSD** = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF GC SCAN DATA

- This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

RFW Batch Number: 0312L369

Nonhalogenated Volatiles by GC, Method 8015

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

• • • • • • • • • • • • • • • • • • •	Cust ID:	B17RT8	B17RT8 B17RT8	BLK	BLK BS	
Sample Information	RFW#: Matrix: D.F.: Units:	004 SOIL 1.00 ug/Kg	004 MS 004 MSD SOIL SOIL 1.00 1.00 ug/Kg ug/Kg	03GCX011-MB1 SOIL 1.00 ug/Kg	03GCX011-MB1 SOIL 1.00 ug/Kg	
Ethylene Glycol	- # - # # # # # # - =	26.0 Ú	99 % 96 %	1======f3 25.0 U	.=======f1== 85 %	.m======fl

Ho I I'M

Report Date: 01/15/04 19:10

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Custody Transfer Record/Lab Work Request Page / of / Lionville Laboratory Use Only 03/21369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS Client TNUttunford F03-025 Refrigerator # Liquid Est. Final Proj. Sampling Date _ #/Type Container Project # 1(343 - 606 - 001 - 9999 -07 Solid BARL 3/10 AG. AGI Liquid Project Contact/Phone # _____ Volume Lionville Laboratory Project Manager O. John son 250 120 120 40 250 500 40 40 Solid QC SPEC Del 5-10 TAT 30 days Preservatives INORG ORGANIC PCBs **ANALYSES** Date Due ____ 1-14-03 Date Rec'd 12/15/03 REQUESTED Lionville Laboratory Use Only Matrix MATRIX OC. CODES: 0625 x 08015 @×3₩ ICAG INSUL Date Time 120 H Lab J Chosen Client ID/Description 88 S - Soil Collected Collected (V): SE - Sediment SO - Solid MS MSD SL - Sludge 12/5/03 1500 W - Water 001 BITR45 O - OII : " 12/6/03 1545 A - Air 002 BITRT3 DS - Drum 1545 003 BITRTO Solids DL - Drum 12/7/03 1030 Liquids L - EP/TCLP BITRT8 1410 Leachate 005 BITRUS WI - Wipe 12/10/03 1245 X - Other BITRW4 F - Fish 12/7/03/1030 BITRVZ DATE/REVISIONS: Special Instructions: SAF # F03 -025 Add 08015 to -004 Lionville Laboratory Use Only (7-19-0) 1 Run Matrix Qc MET 1. RCRA + Sb. Be, Bi, Cu. Ni Samples were: Tamoer Resistant Seal was: 1) Shipped ____ or 1) Present on Outer Hand Delivered _____ Package Y or N Airbill # 2) Unbroken on Outer Package Y or N 1 c 0 = c1, F, NO, NOZ, PO4. SO4 2) Ambient or Chilled 3) Present on Sample Y or N 3) Received in Good Condition Y or 4) Unbroken on 4) Samples Sample Y or N Properly Preserved or N COC Record Present Relinguished Received Relinguished Received Discrepancies Between Date Time Date Time Upon Sample Rec't Samples Labels and Y or N COC Record? Y or N 12/5/03/0950 ORIGINAL Demi Fedex Holding Times Cooler ' "COMPOSITE NOTES: Y or N -Temp. _____ °C

WASTE

(6) KIDA BNA PIPCO From Well DIN

FLUOR Hanford Inc.	CENTRAL PLATEAU	CHAIN OF	CUSTODY/S	SAMPLE ANA	LYSIS REQUI	EST	F03-0	25-001	Page 1	of T
Collector POPE / PFISTER / Hughes	Company Contact TRENT, STEVE	Telephor 373-50	ne No.		Project Coordin TRENT, SJ	7404	e Code 8	N	Data Tur	
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (0.5 ft)				SAF No. F03-025	Air	Quality		45 1	Days
Ice Chest No. ERC 02 50/	Field Logbook No.		COA 119143ES10		Method of Shipi FEDERAL EX	PRESS		•		
Shipped To 1971 10-29-03 EBERLINE SERVICES (Formerly TMA) RC FOL	Offsite Property No.	A04.	0 059)	Bill of Lading/	Air Bill No.	SEE	057		I
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	Cool 4C							
Const. Manually Stayage	Type of Container	aG	aG							
Special Handling and/or Storage	No. of Container(s		60mL							
	Volume	60mL	Chloro-							
SAMPLE ANALYSIS		Pesticides - 8081	Herbicides - EPA8151						•	
										OCC STANDARDAN AND AND AND
Sample No. 4 Matrix * Sar	mple Date Sample Time									
	-5-3 /5:w					715	10	B17/	16	1,
					-	-			<u> </u>	
									· · · · · · · · · · · · · · · · · · ·	
										Matrix *
Relinquished By/Removed From Date/Time 16:00 Rece		Date/Time 14	:00	AL INSTRUCTI	UNS					S=Soil SE=Sediment SO=Solid SI=Shadge
MO-026 Fridge # 12/8/03 G Relinquished By/Removed from Date/Time 12/5 Rece	ves Themas Year	Date/Time		mel not availabl	e to					W = Water O≂Oil A=Air DS=Drum Solid
Relinquished By/Removed From Date/Time Rece	Sived By/Stored In	27/03 /2 Date/Time	Relin	quish samples from 12 /12	om 3728					DL=Drum Liqu T=Tissuc WI=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From Pate/Time Reco	eived By/Stored In	Date/Time Date/Time		•						X=Other
Relinquished By/Removed From Date/Time Reco	eived By/Storfd In								-	
LABORATORY Received By SECTION		1	itle				· .		ntc/Time	
FINAL SAMPLE Disposal Method				Disposed By				n	ate/Time	

FLUOR Hanford Inc.	CEN'	TRAL PLATEAU (CHAIN OF	CUSTO	Y/SAMPL	E ANA	LYSIS	REQUE	ST	F	03-025-003	Page <u>i</u>	01 <u>1</u>
Collector POR PHORE HUGHES	Compar TREN	ny Contact NT, STEVE	Telepho 373-5	ne No. 689			Project TRENT	Coordina , SJ	ator	Price Code	8N	Data Tu	irnaroui Days
Project Designation 200-LW-1/LW-2 Characterization - Soil	Samplir 216-I	ng Location B-58 (17.5 - 20 ft)	i.	e Mercea Particol			SAF No F03-02). 5		Air Qual	ity 🗍	45	Days
ice Chest No. EPC 02 - 501	Field Le	ogbook No.		COA 119143E	310			of Shipn ERAL EX		•		•	
Shipped To TYD 10-29-03, Recra	Offsite 1	Property No. Ac	340	059			Bill of	Lading/A	ir Bill N	^{60.} SG	E OS		
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	None									
Special Handling and/or Storage	ŀ	Type of Container	G	G/P					,		·		
Special Manufully and Storage		No. of Container(s)	l I										<u> </u>
		Volume	250mL	250tfL									
SAMPLE ANALYSIS	•		See item (1) in Special Instructions.	See iten (2) i Special Instructions					٠.				
				4/4						·			11 100 110
	nple Date	Sample Time						Service Co.		i de la companya de La companya de la co		190	3
	<u>-6-3</u>	15:45		 		<u> </u>				776		13/7	21
B17RT6 SOIL /	2-6-3	5 15:45							•	177	E 70	3170	47
						 						 	
	<u> </u>					<u> </u>			·				-
CHAIN OF POSSESSION	0			des		<u> </u>							<u> </u>
celinquished By/Removed From Date/Time/800 Rece	Sign/Print Nived By/Stored	l In Da	tc/Time 5-3 /8	The	CIAL INSTR laboratory is to corganics from	analyze p	H within 2	4 hours of s sis. See SA	ample rec F COC C	eipt. The lab omments for l	oratory is to report solding time issue	t kerosene s.	Mai s=soii se=so
Receiptuished By/Removed From Date/Time 1230 Receiption #2 12/8/03 G	ived By/Stored	in Sug Time		(2)	Chromium Hex Vickel-65; Gam vican-232), Tric	illia Spec-	-Radium 4	Padium 22	6: Rodinn	1-2281: Teelm	se - 413,1 stimm-99; Isotopi	Thorism	SO≈Se S1=Sh W ≃ W O≃Oil
Received From Date/Time /2/15 Received From Date/Time /2/15 Received From Date/Time /2/15 Received From Date/Time Received Fro		10 - 68c 12/0	te/Time	1	andrase i i i		- em outel	r _i Du omu tili	1-07 ₁ 70 ₁ **	R	p 12/2/3		A=Air DS=Di DL=D
5JGALENIEL-12/203 1000 F		<i>三</i> 〉	te/Time		ersonnel not	t avaitab	le to						T=Tiss WI=W L=Liqu V=Ver
FOREX 13/15/03 0450	ived By/Stored	W	ite/Time		Relinquish sa Ref# /// on	imples fr	om 3728						X=Oth
	a Dyrototeu	<i>U</i>		1			•						
LABORATORY Received By SECTION			Tit	le							1	Date/Time	'
FINAL SAMPLE Disposal Method					Diam	sed By						Date/Time	

FLUOR Hanford Inc.	CENTR	AL PLATEAU C	CHAIN OF	CUSTOD	Ý/SAMPLI	E ANA	LYSIS REQ	UEST	F03	-025-004	Page <u>I</u>	of 1
Collector PDE PhSter Mahas	Company C TRENT,	Contact STEVE	Telepho 373-5				Project Coord TRENT, SJ	linator 1	Price Code	8N	Data Tu	
Project Designation 32. 200-LW-1/LW-2 Characterization - Soil	Sampling I 216-B-58	ocation 3 (22,5 - 25 ft)	· 		1 1 1		SAF No. F03-025	A	ir Quality		45	Days
Ice Chest No. RRC 02 501	Field Logb	N-3510-1		COA 119143ES	10		Method of Shi FEDERAL					
Shipped To TYYS 10-78-03 -EDERLINE SERVICES (Formerly TMA)	Offsite Pro	perty No A 04	005	9			Bill of Lading	g/Air Bill No) SEE	980		
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Cool	4C None	None	None	·		
	Ty	ype of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P			
Special Handling and/or Storage	No	o. of Container(s)	3	1	3	. 1	1	1	1 /	V .		
		Volume	40mL	120mL	40mL	120n	aL 250mL	500mL	500m.			
SAMPLE ANALYSIS		V.	VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Ethylene glycoi}	PCBs -	8082 Sec item (2) i Special Instructions	Special	Special			
Sample No. Matrix * Sam	ole Date	Sample Time				Cough in		T I				
	7-3	10:30					2007-10 PARIO - 117-A CORD.	10.5 11.50 (Aview Jesse) 44	7	アルデ	U B17	RVI
				10.7		.re	ersonnel not avelinquish sample ef # <u> A</u> on <u> Z</u>	es from 3728				
			3								. :	Matrix *
CHAIN OF POSSESSION Sign/Print Names Relinquished By/Removed From Date/Time Date/Tim											SE-Sediment SO-Solid SI-Sludge W = Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids T-Tissue Wi=Wipe L-Liquid V=Vegetation	
FINAL SAMPLE Disposal Method DISPOSITION	SECTION Rel. by: Fred Ex 15/15/15 0950 RE]	Date/Time	

FLUOR Hanford Inc.	CENTRAL P	LATEAU CHAII	N OF CUS	STODY	/SAMPLE AF	NALY	SIS REQUI	EST	F03-	025-005	Page <u>1</u>	of T
ollector PDD PROPORTH MIS	Company Contac TRENT, STEV		lephone No 373-5689	•			ject Coordii ENT, SJ	ator Pr	ice Code	8N	Data Tur	naround Z
roject Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (27.5						F No. -025	Ai	r Quality		40	Days
ce Chest No. ERC 02501	Field Logbook N	0.	119	DA 0143ES10)	F	thed of Ship EDERAL EX	KPRESS	· · ·	·		· · · · · · · · · · · · · · · · · · ·
Chipped To TOTAL 10-29 TO RECEAUTION TO THE SERVICES (Formerly TMA) RECEAUTION TO THE SERVICES (FORMERLY TMA)	Offsite Property	No. AO	40 0	59		Bil	l of Lading//	Air Bill No.	SEE	057	_	
POSSIBLE SAMPLE HAZARDS/REMARKS	Prese	ervation Co	ool 4C	None /								
Special Handling and/or Storage	Type of	Container		G/P								
	No. of C	Container(s)		1			ļ.					
	Ve	olume 25	50mL 2	50mL					·	,		·
SAMPLE ANALYSIS		Sp	pecial S	item (2) in secial fuctions.			. de					
Sample No. Matrix * Sa	imple Date Sa	ample Time									1185 2446	图 图 图 4
317RV5 SOIL <i>[2</i>	-7-3 /	14:10 >	X L					715	70	BIZ	RUZ	
											<u> </u>	
								<u> </u>		<u> </u>		ļ
CHAIN OF POSSESSION	Sign/Print Names			SPEC	IAL INSTRUC	TIONS		L		<u>.l. , , , </u>	1.	Matrix *
Relinquished By/Removed From Date/Time 16:40 Rec. CUANUGES 24 Date/Time 16:40 Rec. Mostly Ref. #1 (2/8/03 Celinquished By/Removed From Date/Time 1245 Rec. Mostly Ref. #1 (2/8/03 Celinquished By/Removed From Date/Time 1245 Rec. Greethoones 12/8/03	eived By/Stored In GOGG Fridge # rejved By/Stored In Fred / Lumes / reived By/Stored In Reived By/Stored In Reived By/Stored In	Date/Tin Date/Tin Date/Tin	//6:40 ne /236 - /2/8/0 ne	The laterange of the control of the	ooratory is to analy organics from the V aromium Hex - 719 alcel 93, Gamina S was 232), Tritium	yze pH w WTPH-D 96; NO2/ Spec - R a	ithin 24 hours o analysis. See S NO3 - 353.2; S olum (Radium:	SAF COC Con ulfides - 9030; 226, Radium- 2	onents for hold	ling time issue: - 413,1	s. c Therium	S=Soli SE=Sediment SO=Solid SI=Studge W = Water O=Oii A=Air DS=Drunt Solids DL=Drunt Liquids T=Tissue
SIGHLENIAD-12-12-03 0930 F	eived By/Stored In ED EX eived By/Stored In	Date/Tin		- I n .	sonnel not avail	es from .	5/28			* :		WI=Wipe L=Liquid V=Vegetation X=Other
	ceived By/Stored In	Date/Tin	ne	Ref	f# <u>)A</u> on <u>12</u>	1,52 1	<u>03</u>					
LABORATORY Received By SECTION			Title								Date/Time	
FINAL SAMPLE Disposal Method					Disposed						Date/Time	

ELUOR Hanford Inc.	ANNISM	Company	RAL PLATEAU C Contact C STEVE	Telephor	ie No.			Project Coord		Price Code	8N	Data Tı	urn
Project Designation 200-LW-1/LW-2 Characterization - Soil	MICE	Sampling Location 216-B-58 (97.5 -100 ft)			1 3 2 5.		SAF No. 703-025	-	Air Qual	ity 🗌	45	D	
Ice Chest No. OR COZ SO)	Field Log	thook No. F 3567		COA 119143ES	S10]	Method of Shi FEDERAL	pment EXPRESS				
Shipped To WO 10-19-03 EBERLINE SERVICES (Formerly TMA)	Pera			940	05°	Ī		Bill of Ladin	/Air Bill	[№] 5€	5 03 F	><	·
POSSIBLE SAMPLE HAZARDS/REMA			Preservation	Cool 4C	None								
Cusalat Handling and/on Stoness			Type of Container	G	G/P								1
Special Handling and/or Storage			No. of Container(s)	1	1								T
		.	Volume	250mL	250mL		•						1
SAMP	LE ANALYSIS		, 3 ¹ , 1	See item (1) in Special Instructions	See item (2) in Special Instructions.	1							
Sample No. Matri	x * Samp	le Date	Sample Time										
B17RW4 SOI	L 12-10	0-03	1245	X	/					Tu	= TO]	3 17 Ru	<u>J</u>
signed Villaged Villaged		···				- 							_
7 (V) (M)		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							 				_
							-						- -
CHAIN OF POSSESSION	Lsi	ign/Print N		<u> </u>	SPE	CIAL INST	PRUCTIO	NS .	<u> </u>			<u></u>	+
Relinquished By/Removed, F Am MY (1) Date/I		ed By/Stored	# 1 mo 024 12	ate/Time	75 The rang	laboratory is to ge organics from Chromium He	to analyze pf m the WTPF ex = 7196; NO	l within 24 hours I-D analysis. Se D2/NO3 - 353.2; Radium (Radiu	SAF COC Sulfides - 9	Comments for 9030; Oil & Gre	holding time iss ase - 413.1	ues.	SSS
Relinquished By Removed From Date/	03 100 11kt	ed By/Stored 上#3	328	12-11-03	rri.			Carbon 14; Stro		Total Sr	RP 12/	•	0 A D
Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Date/1	1100 50	ed By/Stored	Alle 121203	ate/Time // // // / ate/Fime		Personner ne Relinquish s	samples fro	ın 3728					L
5JCALF0/12/203	1100 =	ED G	-			Ref # <u>55</u> 0			•				
	ime 0950 Receiv	ed By/Stored		ate/Time			, + + + t						
LABORATORY Received By SECTION		(Ť	itle		.÷		2 1		•	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION						Dis	sposed By					Date/Time	

FLUOR Hanford	Inc.	CEN	ITRAL PLATEAU C	HAIN O	CUSTO)Y/SAMPI	LE ANA	LYSIS I	REQUEST	F03	-025-044	Page 1	of 1
Collector JDP	130 HOAM	OS Compa	ny Contact NT, STEVE	Telepho 373-5				Project (TRENT,	Coordinator SJ	Price Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Characteriza	tion - Soil		ng Location B-58 (22:5 - 25 ft)	:				SAF No. F03-025	÷ .	Air Quality		45 1	Days
Ice Chest No. ER CO.	2501	Field L	ogbook No. HNF- N-3610-	1	COA 119143E	S10			of Shipment RAL EXPRES	ss			
Shipped To TYYOU 2-2			Property No.	040	059	7		Bill of L	ading/Air Bi ک	II No. シェ ロシア	<u> </u>		
POSSIBLE SAMPLE HAZA			Preservation	Coal 4C	None								
Special Handling and/or S	torage		Type of Container	G	G/P								
			No. of Container(s)	1	1								
			Volume	250mL	250mL								
	SAMPLE ANAL	YSIS		See item (1) Special Instructions	Special	L.							
Sample No.	Matrix *	Sample Date	Sample Time				554						
B17RV2	SOIL	12-7-	3 10:30	X	/		_			The	700 3	12RL	//
				ļ			_					-	
A State of the sta				 							-		
													·
CHAIN OF POSSESSIO Relinquished By/Removed From Relinquished By/Removed From SHE Trailer Rima	Date/Fine 16:12 Date/Fine 12:20 Date/Fine 12:20 Date/Fine 12:20 Date/Fine 12:20 Date/Fine 12:20 Date/Fine 12:20 Date/Fine 16:12	Received By/Stor	red in D Lifer Roma Fridge red in Management	Sections 1	730 (1) 9-03 (2)	ge organics fro Chromium Ho Nickol 63 G	to analyze om the WT ex - 7196;	pH within 2 PH-D analys NO2/NO3 -	is. See SAF CC 353.2: Sulfides	e receipt. The labor of Comments for ho 9030; Oil & Grease dinm 228; Technet of Total Sr	lding time issue : - 413, l	S,	Matrix * S=Soll SE=Sediment SO=Solid SI=Shudge W = Water O=Oil A=Air
Returniehed By/Removed From Reinquished By/Removed From 2 TO 02	Date/Time 100	Received By/Stor	#2 DA-	ate/Time	1000					. /۷	<i>[</i> 12]	43	DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time	Received By/Sto	red In 772 X	D-11-C		Personnel no Relinquish sa Ref# <u>1f</u> +on	amples fr	om 3728					X=Other
LABORATORY Received B		13/15/1		rc bu	ritle IPC	nn					1	Date/Time	
FINAL SAMPLE Disposal M DISPOSITION		, - ,				Di	isposed By					Date/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD Date: Purchase Order / Project# / SAF#/SOW#/Release#: F03-025 LvLI Batch #: Sample Custodian: 03/21 369 NOTE: EXPLAIN ALL DISCREPANCIES Airbill# 7923 8938 8227 Carrier Samples Hand Delivered or Shipped Custody seals on coolers or shipping Comments □ No ☐ No Seais container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? Temp 15 °C Cooler # ERC - 02 - 501 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No □ No Seals signed and dated? 7. coc signed and dated? □ No 8. Sample containers are intact? · 🗆 Yes □ No

Short holds taken to wet lab?

12. Samples received within hold times?

11. Samples properly preserved?

received on coc?

13. VOA, TOC, TOX free of headspace?

9. All samples on coc received? All samples

10. All sample label information matches coc?

14. QC stickers placed on bottles designated by client?

 Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

 Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) ☐ Yes ☐ No
☐ Yes ☐ No

[2 Yes

2 Yes

1 Yes

☐ Yes

lo E

□ No

□ No

□ No

□ No

□ No

□ No

No Discrepancies



Lionville Laboratory, Inc. GCSC ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT	ΙĎ		LVL	#	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8 B17RT8 B17RT8			004 004 004	MS MSD	S S	03GCX011 03GCX011 03GCX011		12/19/03 12/19/03 12/19/03	12/21/03 12/21/03 12/21/03
LAB QC:					—. 				
BLK BLK	*	 	MB1 MB1		S S	03GCX011 03GCX011	N/A N/A	12/19/03 12/19/03	12/21/03 12/21/03





Analytical Report

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00 Date Received: 12-15-2003

GC SCAN

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted on 12-19-2003 and analyzed on 12-21-2003 according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures. The extraction procedure was based on method 3580A (waste dilution – 1 g into 5 mL water) and the extracts were analyzed based on method 8015 for client specified target compound n-Butanol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The sample was analyzed within required holding time.
- 3. The method blank was below the reporting limit for the target compound.
- 4. Surrogates are not currently employed in the methodology.
- 5. The blank spike recovery was within acceptance criteria.
- 6. The matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations were within acceptance criteria.
- 8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\gcsc\tmu\0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.



GLOSSARY OF GC SCAN DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- **BSD** = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF GC SCAN DATA

- This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

GC SCAN

Report Date: 01/16/04 10:30 RFW Batch Number: 0312L369 Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: B17RT8 Cust ID: B17RT8 B17RT8 BLK BLK BS Sample RFW#: 004 004 MS 004 MSD 03GCX011-MB1 03GCX011-MB1 Information SOIL Matrix: SOIL SOIL SOIL SOIL D.F.: 1.00 1.00 1.00 1.00 1.00 Units: mg/kg mg/kg mq/kq mg/kg mg/kg 26 U n-Butanol 111 105 25 104 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory Use Only 03122369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS F03-025 client TNU Howford Refrigerator # Llauid Est. Final Proj. Sampling Date #/Type Container 344 Solid Project # 1(343 - 606 - 001 - 9999 -00 Liquid Project Contact/Phone #_ Volume 250 Lionville Laboratory Project Manager O. Uokn Son 120 250 500 Solid 60 60 120 TAT 30 days **Preservatives** 90 5/EC Del 5-0 ORGANIC INORG **ANALYSES** Pest 4 Date Rec'd 12/15/03 1-14-03 REQUESTED Date Due Lionville Laboratory Use Only Matrix MATRIX QC. 7606 17 CODES: EN342 ESFD EOGGR Date Time Lab Chosen Client ID/Description Matrix S - Soil Collected Collected SE - Sedment SO - Solid MS MSD SL - Sludge 12/5/03 1500 W - Water BITRYS 001 0:--12/6/03 1545 Air. 002 BITRIS DS - Drum 1545 003 Solids. BITRIG OL - Drum 12/7/03 1030 Liquids BITRT8 EP/TCLP 140 Leachate BITEVS WI.-Wipe 12/10/05 1245 Other BITRWY 12/7/03 1080 BITEVE DATE/REVISIONS: SAF # F03 -025 Lionville Laboratory Use Only Special Instructions: Add 08015 to -004 Run Matrix ac Samples were: Tamper Resistant Seal was: 1) Shipped ---1) Present on Outer Hand Delivered _____ Package Y or N MET 1 : RCRA + Sb. Be, Bi, Cu, Ni 2) Unbroken on Outer Package Y or N 10 0 = CI. F. NO. , NO. , PO. SO. 2) Ambient or Chilled 3) Present on Sample 3) Received in Good Condition Y or M 4) Unbroken on 4) Samples Sample Y or N Properly Preserved COC Record Present N or N Relinguished Received Relinguished Received Discrepancies Between Time Time Date Upon Sample Rec't Samples Labels and 5) Received Within Y or N COC Record? Y or N ORIGIN 12/5/03 0950 Fedfy Pemi Holding Times Cooler "COMPOSITE NOTES: Y or N Temp. ____ WASTE"

(b) KAA BAA PIPEB From Will DIA Nich

FLUOR Hanford In	ıc.	CENTR	AL PLATEAU C	HAIN OF	CUSTOD	Y/SAMPLI	E ANA	LYSIS REQU	EST	F03	-025-001	Page 1	of 1
Collector POPE / PFISTE	er / Hughes	Company TRENT,	Contact STEVE	Telepho 373-5				Project Coord TRENT, SJ	nator	Price Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterization		Sampling 216-B-5	Location 8 (0.5 ft)		:	=	: :	SAF No. F03-025	5°	Air Quality		45	Days
Ice Chest No. ERC C	2501	Field Logi	ook No.		COA 119143ES	10		Method of Shi FEDERAL E	XPRESS				
Shipped To 1990 10-29-03 EBERLINE SERVICES (Former	WIMA) RICKA	Offsite Pr	operty No.	A04	0 05	9		Bill of Lading	/Air Bill l	Vo. 5E2	5 05 F	<u> </u>	
POSSIBLE SAMPLE HAZARD			Preservation	Cool 4C	Cool 4C				1				
g		1	ype of Container	aG	aG						·		
Special Handling and/or Stor	age	N	o. of Container(s)	ı									
			Volume	60mL	60mL								
	SAMPLE ANALYSIS			Pesticides ~ 8081	Chloro- Herbicides - EPA8151								
Sample No.	Matrix * Sam	ple Date	Sample Time	0.2 ± 0.5	4666	8:02:52		per Grades A	Passas		643		
B17RY5	soil 12-	<u>5-3</u>	15:00						71	ETO	B 171	RY6	
									<u> </u>		<u> </u>		
									<u> </u>		_		<u> </u>
			1		1	L	<u> </u>				<u> </u>		
CHAIN OF POSSESSION Relinquished By/Removed From	Date/Time 16:00 Recei	0-0261	n Fridge#1 12	-5-3	:00	CIAL INSTR	RUCTIO	ONS					Matrix * S=Soil SE=Sediment SO=Solid
Relinquished By/Removed From MO-026 Fridge #1 Relinquished By/Removed From	12/8/03 61	ved By/Stored In	res Strong The	ate/Time ate/Time									SI=Shidge W = Waler O=Oil A=Air
Greg Thomas Ding Thom Relinquished By/Removed From SJ6A(ENX) 12-	Date/Time Recei	ved By/Stored I	n D	103 /ate/Time	Re	sonnel not a dinquish sam f#/A on/	ples fro	m 3728					DS=Drum Solids DL=Drum Liquid T=Tissue WI=Wipe L=Liquid V=Vegetation
Palinguished By/Pamoyad From	Date/Time Recei	ved By/Stored I	n D	ate/Time			٠., .						V=Vegetation X=Other
Relinquished By/Removed From	Date/Time Rece	ived By/Stored I	n D	ate/Time									
LABORATORY Received By SECTION	<u> </u>			1	itle		-					Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION	o đ					Dispo	osed By					Date/Time	

renna expressions

FLUOR Hanford Inc.	(CENTRAL PLATEAU	CHAIN OF C	USTODY	SAMPLE A	NALYSIS REQ	UEST	F03	-025-003	Page <u>I</u>	of 1 C
llector PDD PFFFE H	MIS CO	ompany Contact TRENT, STEVE	Telephone 1 373-5689		· · · · · · · · · · · · · · · · · · ·	Project Coord TRENT, SJ	linator	Price Code	8N		rnaround
oject Designation 200-LW-I/LW-2 Characterization - Soil	Sa	mpling Location 216-B-58 (17.5 - 20 ft)			: :	SAF No. F03-025		Air Quality		45	Days
Chest No. ERC 02 - 50) Fid	eld Logbook No.		COA 19143ES10		Method of Sh FEDERAL					
ipped To TWO 10 - 29 - 0 3 (BERLINE SERVICES (Formerly TMA)	Pecra or	isite Property No. A	0400	59		Bill of Ladin	g/Air Bill I	10. SG€	= 08 P	<u></u>	
OSSIBLE SAMPLE HAZARDS/REMAR	KS	Preservation	Cool 4C	None							
pecial Handling and/or Storage		Type of Container	G	G/P	\$						
poemit zamoning minor or orongo		No. of Container(s)	1 250	250.6							
	·	Volume		250mL							
SAMPL	E ANALYSIS		Special	iter (2) in Special structions.							
Sample No. Matrix	Sample D	ate Sample Time									
7RT3 SOIL	12-6-	3 15:45	1-1					77.6=	70	317	215
7RT6 SOIL	12-6	-3 15:45	- /					Tië		3170	475
											. 1.1 2
					- 4						
											<u> </u>
	6-3 Received By	Fridgetto 12	0ate/Time 6-3 /800 0ate/Time /236	The labo	anics from the W	TONS e pH within 24 hours TPH-D analysis, See ; NO2/NO3 - 353.2;	SAF COC	Comments for hold	ing time issues	kerosene	Matrix * S=Soil SE=Sediment SO=Soild
10-026Fring+ #2 R/B/0	3 Greg Ti	homes Mugy Im	1 7	(2) Nict	el-65, Gantina Se	oc - Radium (Radium H3; Carbon-14; Street	226 Padin	n-228) · Technotic	m-99, Isotopie		Si=Shulge W = Water O=Oil A=Air
inquished By/Removed From Date/Tim	Received By		28/23 /248 Date/Time					KP	12/2/3	· , .	DS=Drum Sel DL=Drum Liq T=Tissue
JGALE MALL 12 12 03 inquished By/Removed From Date/Tim	Received By		Date/Time		onnel not avail inquish sample						WI≃Wipe L≃Liquid V≃Vegetation X=Other
CRAEX 13(15(03) 01 inquished By/Removed From Date/Tim		/Stored Ag D	Date/Time	Ref	# // on 12/	12/03					
ABORATORY Received By SECTION			Title	<u> </u>					D	ate/Time	<u></u>
NAL SAMPLE Disposal Method					Disposed B	y	<u>. '.</u>			Date/Time	· · · · · · · · · · · · · · · · · · ·

FLUOR Hanford	d Inc.	CEI	NTRAL PLATEAU (CHAIN OI	F CUSTO	DY/SAMPL	E ANA	LYSIS REQU	EST	F03	-025-004	Page 1	of 1
Collector PDP PM	Her High	S Compr	any Contact ENT, STEVE	Telepho 373-5	ne No. 689			Project Coord TRENT, SJ	inator	Price Code	 		rnaround
Project Designation 200-LW-1/LW-2 Characteriza	ation - Soil		ling Location -B-58 (22.5 - 25 ft)					SAF No. F03-025		Air Quality	<u> </u>	45	Days
Ice Chest No.	2501	Field I	Logbook No. NF - N-3510-1		COA 119143E	ES10		Method of Ship FEDERAL E			***		
Shipped To That to 78 - 28 - EBERLINE SERVICES (For	1-03 Recra		e Property No AOY	0 05	7			Bill of Lading	'Air Bill N	% 5 <i>€</i> 8	730		
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4	4C None	None	None			
Special Handling and/or S	tavaan		Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P			
Special Handing and/or 5	toruge		No. of Container(s)	3	i	3	, 1	1	1.	1/			
			Volume	40mL	120mL	40mL	120n	ıL 250mL	500mL	500mL			
	SAMPLE ANAL	ysis		VOA - 8260A (TCL)	See item (1) i Special Instructions	Glycols, &	PCBs - 1	See item (2) in Special Instructions.	See item (3) Special Instruction	Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time										
B17RT8	SOIL	12-7-3								7	-	v 'B17	01/1
			3 10.00								116)	0 017	A VSI
								ersonnel not avai					
								elinquish samples ef# <i>[A</i>] on <i>[</i> 2]					
ON THE OF POSSESSION				<u></u>			L		<u> </u>	~		-	
LABORATORY Received By	Date/Time 1000	Received By/Store Received By/Store Received By/Store Received By/Store Received By/Store Received By/Store	ed In Er RMA Fridge Da Ber Proposition Day 100 Part Proposition Day 100	ate/Time O3 V3 ate/Time ate/Time 1	7 The range of the	ge organics from the semi-VOA - 827 sed Range - WTP; osene range; TPI ICP Metals - 6010A (71 - (CV) IC Anions - 300, anide - 9010; pH (10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	analyze p the WTPl 70A (TCL H-D (To H-Gasoli 10A (Sup (Supertra 0 (Chlor (Soil) - 90	H within 24 hours of H-D analysis. See S) {Phenol}; Semi-Vatal petroleum hydrone Range - WTPH- ertrace) {Arsenic, Euce Add-On) {Antinide, Fluoride, Nitrational Phenoleum hydrone Range - WTPH- ertrace) {Arsenic, Euce Add-On) {Antinide, Fluoride, Nitrational Phenoleum hydrone Nitrati	SAF COC C OA 827(carbons - di 3 Barium, Cad nony, Beryli	Comments for hole DA (Add-On) (Tr lesel range, Total mium, Chromium lium, Bismuth, Co	ling time issues, ibutyl phosphate petroleum hydro , Lead, Selenium pper, Nickel}; i }; Ammonia - 3	s}; TPH- cearbons - n, Silver}; Mercury -	Matrix * S-Soil SE-Sediment SO-Solid SI-Studge W = Water O-Oll A-Afr DS-Drum Solids DL-Drum-Liquids T-fissee W1-Wipe L-Liquid V-Vegetation x-Other
FINAL SAMPLE Disposal Me		<i>; </i>		<u>ecpy</u>			sed By				E	Date/Time	

FLUOR Hanford Inc.	CENTRAL PLATEAU CHA	IN OF CUSTODY/SAMPLE AN	ALYSIS REQUEST	F03-025-005	Page 1 of 1 (
Collector FDR PROPERTY MAS	Company Contact T TRENT, STEVE	elephone No. 373-5689	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround		
roject Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025	Air Quality [45 Days		
ce Chest No. ERC 02501	Field Logbook No.	d Logbook No. COA 119143ES10 Method of Shipment FEDERAL EXPRESS					
Shipped To TWO 10-29-02 Recra	Offsite Property No. AO	40 059	Bill of Lading/Air Bill	No. SEE OSP	<u>C</u>		
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation C	pol 4C None					
Special Handling and/or Storage	Type of Container	G G/P					
	No. of Container(s)	1 1 50mL 250mL					
SAMPLE ANALYSIS] s	tem (1) in Sec itsm (2) in special suctions.					
	ample Date Sample Time		kad Walle Fra				
B17RV5 SOIL 16	2-7-3 14:10	X		STO BIT	RUZ		
					+		
CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCT	TONS		Matrix		
Relinquished By/Removed From Date/Time 1230 Relinquished By/Removed From Date/Time 1245 Relinquished By/Removed From Date/Time 1245 Relinquished By/Removed From Date/Time Rel	paceived By/Stored In Date/Ti Date/Ti	range organics from the W me /230 (1) Chromium Hex - 7196 (2) Nieled 65; Gamma Sp (Thorium 232); Tritium - 1 me Personnel not availa Relinquish samples	TPH-D analysis. See SAF COC, NO2/NO3 - 353.2; Sulfides - 960 - Radium (Radium-226, Radius, Carbon-14; Strontum-89,96) ble to from 3728	imir 228); Technotium 90; Isotopi - Total 31 RP 12/2	SS. S=Soil SE=Soilmei SO=Solid SI=Sludge W= Water O=OH A=Alr		

ELUOR Hanford Inc.	CENTRAL PLATEAU CHAIN	N OF CUSTODY/SAMPLE ANAI	YSIS REQUEST	F03-025-008	Page 1 of 1
Collector 4DD HOB RUNOSU			Project Coordinator FRENT, SJ	Price Code 8N	Data Turnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (97.5 -100 ft)		Air Quality 🔲	45 Days	
Ice Chest No. 32 02 501	Field Loghook No. NNF 356 /	119143ES10	Method of Shipment FEDERAL EXPRESS	· · · · · · · · · · · · · · · · · · ·	
Shipped To MT 10-19-03 Valor BBERLINE SERVICES (Formerly TMA)	Offsite Property No. A04	0 059	Bill of Lading/Air Bill N	10. SEE 03P	
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation Coo	ol 4C None			
Special Handling and/or Storage	Type of Container	G G/P			
Special Manager Storage	No. of Container(s)	1 1			
	Volume 250	0mL 250mL			
SAMPLE ANALYSIS	Spe	em (1) in See item (2) in colal Special Instructions.			
Sample No. Matrix * Sam	ole Date Sample Time				
	0-03 1245	/		TIETO B	17RW6
CHAIN OF POSSESSION S	ign/Print Names	SPECIAL INSTRUCTIO	NE		Matrix *
Relinquished By/Removed From Date/Time 151.5 Receip Date/Time Date/Time 12-11-13 1000 Time	By Stored in MO 024 Date/Time (104 C # 1 MO 024 D 6-6-8) By Stored in Many Market 12	The laboratory is to analyze pl range organics from the WTPI ie 1000 (1) Chromium Hex - 7196; N (2) Nickel-63; Gamma Spec-	1 within 24 hours of sample re 1-D analysis. See SAF COC (02/NO3 - 353.2; Sulfides - 90 Radium (Radium-226; Radiu	m-228); Technetium-99; Isotopie	kerosene S-Soil SE-Sediment SO-Solid SI-Studge
Illuminary many many 12/11/03 / K		11-03	e to	KF 12/2/	DS=Dram Solids DL=Dram Liquids T=Tissue W1=Wipe L=Liquid
Relinquished By/Removed From Date/Time Receipt Strate Office (21203 1100)	ed By/Stored In Date/Tim	Ref # 58 on 12/12	om 3728		V=Vegentien X=Other
Relinquished By/Removed From Date/Time Page 18 Recei	red By Stored In Date/Tim				
LABORATORY Received By SECTION		Title		D	Pate/Time
FINAL SAMPLE Disposal Method DISPOSITION		Disposed By		I	Date/Time

FLUOR Hanford Inc.	CENTRAL PLA	TEAU CHAIN O	F CUST	ODY	//SAMPLE	ANA	LYSIS REQU	EST	F03	-025-044	Page 1	of 1
Collector JODE PHSTO HOMES	Company Contact TRENT, STEVE	Telepho 373-5		:			Project Coordi TRENT, SJ	nator	Price Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (22.5 - 2	25 ft)					SAF No. F03-025		Air Quality		45.1	Days
Ice Chest No. ER C 02 501	Field Logbook No.	-3510-1	COA 11914		0		Method of Ship FEDERAL E	ment XPRESS				
Shipped To Try 510-24-03 RECENTED THE SERVICES (Formerly TMA)	Offsite Property No.	A040	05	9			Bill of Lading	Air Bill N	10. 5 03 70	*		
POSSIBLE SAMPLE HAZARDS/REMARKS	Preserve	Cool 4C	Nor	ne /								
Special Handling and/or Storage	Type of Co		G/	P								
	No. of Con Volu	250mL	250	1								
SAMPLE ANALYSIS	1	See item (1) Special Instructions	Spec	ial								
Sample No. Matrix * Se	mple Date Samp	ple Time · Liberting		25. V.				10000				
B17RV2 SOIL /S	1-7-3 10	:30 X	_/						The	10 3	1786	//
			_									100
								 				
			_					 		 		
								1		1	<u></u>	
Relinquished By/Removed From Date/Time 1230 Rec 21 Property Proper	manansenjan civedity/stosed in 1000	Date/Time J DATE/Time J DATE/Time DATE/TIME	330 9-03	The la range (1) Cl	organics from t aromium Hex - skel 63: Game	nalyze he WTI 7196; ì	UNS within 24 hours of the within 24 hours of the University of th	SAF COC (ulfides - 90 226, Redin	Comments for holes 30; Oil & Grease 3281: Technotic	ding time issues - 4[3.]	•	Matrix * S-Soil SE-Sediment SO-Solid SI-Stadge W = Water O-Oil A-Air DS-Deam Solids DL-Dram Liquids T-Tissuo
Reinquished By/Removed From 24 12 1103 Res	erived By/Stored In	Date/Time	130	Re.	sonnel not av linquish samp	oles fro	m 3728					Wi≈Wipe L=Liquid V=Vegention X=Other
Relinquished By/Removed From Date/Time Re	eived By/Stored In	Date/Time		Ref	# <u> </u>	/(2	<u>/ c7</u>					
LABORATORY Received By SECTION Rel. 64, Fedgy 12	115/103 095	o Rec. by	Title	en	y			· · ·		Γ.	Pate/Time	
FINAL SAMPLE Disposal Method DISPOSITION				-:		sed By				1	Date/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD Date: Purchase Order / Project# / SAF#/SOW#/Release#: F03-025 LvLI Batch #: Sample Custodian: 03/21 369 NOTE: EXPLAIN ALL DISCREPANCIES 792389388227 Carrier Airbill# Samples Hand Delivered or Shipped 2. Custody seals on coolers or shipping □ No ☐ No Seals Comments container intact, signed and dated? Outside of coolers or shipping containers are □ No free from damage? All expected paperwork received (coc and □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC - 02 - 501 Temp 1.5 °C 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No ☐ No Seals signed and dated? 7. coc signed and dated? □ No Sample containers are intact? - DYYes □ No All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? 2 Yes □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No 14. QC stickers placed on bottles designated by ☐ Yes □ No

11 Yes

☐ Yes

□ No

□ No

⊟ No

Discrepancies

client?

outside criteria)

15. Shipment meets LvLI Sample Acceptance

Policy? (Identify all bottles not within policy. See reverse side for policy)

16. Project Manager contacted concerning

discrepancies? name/date (or samples



Lionville Laboratory, Inc. DRO ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECETVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID		LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RT8		004	S	03LE1627	12/07/03	12/16/03	12/18/03
B17RT8		004 MS	S	03LE1627	12/07/03	12/16/03	12/18/03
B17RT8		004 MSD	S	03LE1627	12/07/03	12/16/03	12/18/03
LAB QC:			:				
· · · · · · · · · · · · · · · · · · ·	•						
BLK		MB1	S	03LE1627	N/A	12/16/03	12/18/03
BLK		MB1 BS	S	03LE1627	N/A	12/16/03	12/18/03

9- 15/1



Analytical Report

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00

Date Received: 12-15-2003

DIESEL RANGE ORGANICS

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted on 12-16-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 12-18-2003. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015B. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- All results presented in this report are derived from a sample that met LvLI's sample acceptance 1. policy.
- The sample was extracted and analyzed within required holding time. 2.
- The method blank was below the reporting limits for the target compounds. 3.
- All surrogate recoveries were within acceptance criteria. 4.
- The blank spike recovery was within acceptance criteria. 5.
- 6. The matrix spike recoveries were within acceptance criteria.
- All initial calibrations associated with this data set were within acceptance criteria. 7.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- I certify that this sample data package is in compliance with SOW requirements, both 9. technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\dro\tnu hanford\0305-369.doc The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

RFW Batch Number: 0312L369

Diesel Range Organics

Kerosene

DIESEL RANGE ORGANICS BY GC

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

79

12.5 U

12.0 U

12.0 U

Cust ID: B17RT8 B17RT8 B17RT8 BLK BLK BS Sample RFW#: 004 004 MS 004 MSD 03LE1627-MB1 03LE1627-MB1 SOIL Information Matrix: SOIL SOIL SOIL SOIL D.F.: 1:00 1.00 1.00 1.00. 1.00 Units: mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg 80 % p-Terphenyl 79 % 75 103 73 =====f1=======f1=====f1=====f1

8

73

12.5 U

12.5 U

12.5 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Ar. 115101

Report Date: 01/15/04 17:52

82

12.0 U

(6) NOA BNA PIPES From Litels DIG Nich Lionville Laboratory Use Only 03/21369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS DEFEHID Client TNUHanford F03-025 Refrigerator # Liquid Est, Final Proj. Sampling Date #/Type Container BAN ACL BASE ACL Project # 1(343 - 606 - 001 - 9999 -07 Solid Liquid Project Contact/Phone # _____ Volume Lionville Laboratory Project Manager O. Uohn Son 40 250 500 Solid 120 120 OC SPEC DOI 5-TO TAT 30 days Preservatives **ORGANIC** INORG ANALYSES Pest/ Date Rec'd 12/15/03 Date Due 1-14-03 REQUESTED Lionville Laboratory Use Only Matrix MATRIX QC CODES: \pm **ANDHO** Time IN341 ISFD Chosen Date Client ID/Description Matrix S - Soll Collected Collected (V) SE - Sediment SO - Solid MS MSD SL - Sludge 12/5/03 1500 W - Water 001 BITRY5 O - Oil 12/6/03 1545 A - Air 002 BITRT3 DS - Drum 1545 Solids 003 BITRIG DL - Drum 12/7/03 1030 Liquids 004 BITRT8 EP/TCLP 1410 Leachate 005 BITRUS WI - Wipe 12/10/03 1245 X - Other 006 BITRW4 F Fish 2/7/03/1030 007 BITRV2 DATE/REVISIONS: Special instructions: SAF # FO3 -025 12-19-01 1. Add 08015 to -004 Lionville Laboratory Use Only Run Matrix ac Samples were: Tamper Resistant Seal was: 1) Shipped ____ or 1) Present on Outer Hand Delivered _____ Package Y or N MET (): RCRA + Sb. Be, Bi, Cu, Ni Airbill # _____ 2) Unbroken on Outer Package Y or N 100 = CI. F. NO. , NOL. POY SOL 2) Ambient or Chilled 3) Present on Sample Y or N 3) Received in Good Condition Y or M 4) Unbroken on 4) Samples Sample Y or N Properly Preserved-**COC Record Present** Relinguished Received Relinquished Received Discrepancies Between Date Time Date Time Upon Sample Rec't Samples Labels and 5) Received Within Y or N COC Record? Y or N FEDEX Hemi 12/15/03/0950 ORIGINAL

NOTES:

Y or N

Temp.

"COMPOSITE

WASTE"

FLUOR Hanford Inc.	CENTRAL PLATEAU C	HAIN UP	CUSTOD	Y/SAMPLE	ANA	LYSIS REQ	UEST	FU	3-025-001	Page 1	of 1	
Collector POPE / PFISTER / Hughes	Company Contact TRENT, STEVE	Telepho 373-5				Project Coor TRENT, SJ	dinator	Price Code 8N 1			rnaround	
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (0.5 ft)		: :			SAF No. F03-025		Air Quality 📋			45 Days	
ce Chest No. ERC 02 50/	Field Logbook No.		COA 119143ES1	0		Method of Sh FEDERAL	EXPRESS					
Shipped To 1991 10-29-03 EBERLINE SERVICES (Formerly TMA) RC FC	Offsite Property No.	404	005	9		Bill of Ladin	g/Air Bill	No. S €.	E OSF	<u> </u>		
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	Cool 4C									
Sanatal Handling and/on Stoness	Type of Container	aG	aG			•						
Special Handling and/or Storage	No. of Container(s)	1										
	Volume	60mL	60mL									
SAMPLE ANALYSIS		Pesticides - 808 I	Chloro- Herbicides - EPA8151									
							, .					
	ple Date Sample Time		Part of						3 4	h		
B17RY5 SOIL /2-	5-3 /5:w						(1	ETO	B171	RY6		
					<u> </u>	 						
											<u> </u>	
		·	: .									
	Sign/Print Names		SPEC	IAL INSTR	UCTIO	NS					Matrix *	
Relinquished By/Removed from Date/Time 1230 Receiv	0-026 Fridge #1 12-	te/Time -5-3 te/Time	:00 1230		e e	·					S=Soil SE=Sediment SO=Solid Si=Shidge W = Water	
Relinquished By/Removed From Date/Time 1245 Received From 12/8/03	ed By/Stored In Da	te/Time	Pers	sonnel not av	ples from	n 3728					O=Oil A=Air DS=Drum Sol DL=Drum Lig T=Tissue	
S J 6 A (EA) No. 12-12-03 P	ED EX	ite/Time	Ref	#/A on/2	-/14						WI=Wipe L=Liquid V=Vegetation X=Other	
	ved By/Stored In Da	nte/Time							•			
LABORATORY Received By SECTION		T	itle					·		Date/Time	<u> </u>	
FINAL SAMPLE Disposal Method DISPOSITION				Dispo	sed By	:			· · · · · · · · · · · · · · · · · · ·	Date/Time	-	

* * * * * * * * * * * * * * * * * * *					31	·			· 			<u>.</u>	
FLUOR Hanfor	d Inc.	CE	NTRAL PLATEAU	CHAIN O	F CUSTO	DY/SAMPL	E ANA			F03	-025-003	Page 1	of 1
Collector DO	Ster Huahe	S Comp	any Contact ENT, STEVE	Telepho 373-5				Project Coord TRENT, SJ	linator	Price Code	8N	•	rnaround
Project Designation 200-LW-1/LW+2 Characteriz	ation - Soil		ling Location i-B-58 (17.5 - 20 ft)		1	 		SAF No. F03-025		Air Quality		43	Days
Ice Chest No. ERC C	02 - 501	Field	Logbook No.		COA 119143E	S10		Method of Shi FEDERAL I					
Shipped To TWO 10 -2	9-10-3 Rocra	Offsit	e Property No.	340	059			Bill of Lading	/Air Bill N	10. SGE	7 08	>	
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	None	/				·		* 1	
		,	Type of Container	G	G/P								
Special Handling and/or S	storage		No. of Container(s)	1	1								
			Volume	250mL	250nL								
	SAMPLE ANAL	.YSIS		See item (1) in Special Instructions.	Special	` 	-						
Sample No	Matrix *	Sample Date	Sample Time				1175				100		
B17RT3	SOIL	12-6-3	3 15:45							77.6=	70	13/7	215
B17RT6	SOIL	12-6-	3 15:45		<u> </u>					Tie	70	3176	275
				<u> </u>			ļ					<u> </u>	
) Sec													
CHAIN OF POSSESSIO		Sign/Prin		<u> </u>	<u> </u>	1	<u> </u>						Matrix *
Relinquished By/Removed From Relinquished By/Removed From MO OZGF TAG # Relinquished By/Removed From Greg Thomas Her Th	Date/Time/803 Date/Time 1230 2 12/8/03 Date/Time /243	Received By/Stor Me 026 F Received By/Stor Greg 71cc	ed in Die ed in Die Mes Strug Time Die ed in D	ate/Time 6-3 Ate/Time 7 Ate/Time 8/03 13 Ate/Time	700 The range (1) (2) (71)	e organies from Chromium Hex Nickel-03, Gain	analyze p the WTP - 7196; N	H within 24 hours of H-D analysis. See O2/NO3 - 353.2; See O2/NO3 - 453.2; See O2/NO3 - 455.2; See O2/NO3	SAF COC C ulfides - 903 226, Radi nn	omments for hold 0; Oil & Grease 1-2281: Technotic	ling time issues - 413.1	s. ·	S=Sail SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Relinguished By/Remayed From - 1641-1/154-1 Relinguished By/Removed From - 044-7	Date/Time		ed In Di	ate/Time		Personnet not Relinquish sa	mples fr	om 3728					W1=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Stor		ate/Time	. 5	Ref# <u>//</u> on_ -	12/19						
LABORATORY Received By SECTION	,			Ti	tle		-		· · · · · ·		Ē	Date/Time	
FINAL SAMPLE Disposal Mo	ethod				1 1 1	Dispo	sed By				1	Date/Time	

FLUOR Hanfor	rd Inc.	CE	NTRAL PLATEAU (Y/SAMPLI	E ANA				.F0	3-025-004	Page 1	of 1 (
Collector D	Stell High	S Comp	any Contact ENT, STEVE	Telepho 373-5	ne No. 689			Project Coordinator TRENT, SJ			Price Code	01.4		rnaround
Project Designation \$ 200-LW-1/LW-2 Characteriz	zation - Soil		ling Location 5-B-58 (22.5 - 25 ft)					SAF No. F03-025			Air Qualit	у 🗆	45	Days
ice Chest No.	2501	Field	Logbook No. NF - N - 3540-1		COA 119143ES						S			
Shipped To 11113 10-29			e Property No. AOY	0 05	9			Bill	of Lading/	Air Bill N	^{₩.} 5 <i>&</i>	7087		
POSSIBLE SAMPLE HAZA		,	Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4		None	None	None			
Special Handling and/or S	Storaga		Type of Container	aGs*	aG	Gs*	aG		G/P	G/P	G/P			
Special transmil atmosp	otorage		No. of Container(s)	3	i	3	1		1	1.	1 /			ļ
			Volume	40mL	120mL	40mL	120m	ıL	250mL	500ml.	, 500mL			
	SAMPLE ANAL	YSIS		VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 3015 {1-Butanol, Ethylene glycol}	PCBs - S		See item (2) in Special Instructions.	See item (3 Special Instruction	Special	1		
Sample No.	Matrix *	Sample Date	Sample Time					<i>3</i> 1		4.7				64
B17RT8	SOIL	12-7-	3 10:30								/	7167	0°B17	<u> </u>
														- J.
							re	elinqui	el not avail ish samples	from 372				1
							— R	ef# <i>[£</i> !	4_on <u><i>r</i>z_/</u>	17 /05	j			1
CHAIN OF POSSESSIO Relinquished By/Removed From ANNIAL BY/Removed From SHE Trailer AMA The Possession of Prompt	Date/Time 160 Date/Time 1230 TIME 124-03	Received By/Sto	red in Daniel De		The larange	organics from t emi-VOA - 827 I Range - WTP ene range); TPI	inalyze pi he WTPl OA (TCL H-D (To H-Gasoli	H withi H-D and L) (Phenotal petro ne Rang	alysis. See S nol}; Semi-V oleum hydroc ge - WTPH-C	AF COC C OA 827 arbons - d	Comments for h OA (Add-On) (' iesel range, Tot	ratory is to repor olding time issue Tributyl phospha al petroleum hyd	s. te}; TPII- rocarbons -	Matri: s=Soil sE=Sedin sO=Solid sI=Sludg w = Wate O=Oil A=Air
Religiously at the Market Street Stre	Date/Time Day Date/Time 100		#2 194	163 143 143 143 143 143	100 7471 100 (3) I	Metals - 6010A (- (CV)	(Supertra 0 {Chlor	ace Add ide, Flu	i-On) (Antim	ony, Beryl	lium, Bismuth,	nn, Lead, Selenii Copper, Nickel); nte); Ammonia -	Mercury -	DS=Drum DL=Drum T=Tissue WI=Wipe L=Liquid
Retigentiated By Removed From	Date/Time	Received By/Sto	114 3728 12 119 3728 12	ate/Time '11/03/0 ate/Time		reprintinte 227	on (7 mm		RP	/2/	12/3		- Amorian	V=Veget X=Other
KUM 14 4728 1212		೯೯೧೮	X			··-							Date/Time	
LABORATORY Received B		,) / Ti	ile: IPC	ma A							Dater time	

FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN			F03-025-005	Page 1 of 1	
Collector HDD HEBOTH MIS	Company Contact Tele TRENT, STEVE 33	phone No. 3-5689	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnarou	
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (27.5 - 30 ft)		SAF No. F03-025	Air Quality 🗍	45 Days	
Ice Chest No. ERC 02501	Field Logbook No.	COA: 119143ES10	Method of Shipment FEDERAL EXPRES			
Shipped To TWY 10-29-07 Recra	Offsite Property No. A04	0 059	Bill of Lading/Air Bill	INO. SEE OSP	<u></u>	
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation Cool	4C None				
	Type of Container G	G/P				
Special Handling and/or Storage	No. of Container(s)	1/				
	Volume 250a	ու 250 ու				
SAMPLE ANALYSIS	See item Spec Instruc					
Sample No. Matrix * Sam	nple Date Sample Time					
	-7-3 14:10 X		7,	ETO B17	RUZ	
Relinquished By/Removed from Date/Time 14:40 Rece	Sign/Print Names fived By/Stored In Date/Time 1026 Fridge # 12-7-3/ gived By/Stored In Date/Time 1026 Thomas Shapes	range organics from the W /230 (1) Chromium Hex - 7196 (2) Mickel-03, Gamma Spi	pH within 24 hours of sample IPH-D analysis. See SAF CO NO2/NO3 - 353.2; Sulfides -	from 228), Technotium 99; Isoton	S=Soli SE=Soli SO=So Si=Sib	
Relinquished By/Removed from Date/Time /245 Rece Comparison Date/Time Page Pa	tived By/Stored In Date/Time	1245	1.5, © a ton-14, 3ttonaut-09,9	12/2	A-Air DS=Dr DL-Dx T-Tiss Wi-W L-Liq	
Relinquished By/Removed From Date/Time Rece	iveshBy/Stored in Date/Time	Relinquish samples	from 3/28		V-Vej X-Oit	
Relinquished By/Removed From Date/Time Rece	sived By/Stored In Date/Time	Ref#) 14- on 12- /3				
• * * * * * * * * * * * * * * * * * * *					Date/Time	
LABORATORY Received By SECTION		Title				

Collector 4000 H	Ses Plan	S Compa	nny Contact NT, STEVE	Telepho 373-5			T	roject Coordi RENT, SJ	nator	Price Code	8N	Data Tu		
Project Designation 200-LW-1/LW-2 Characteriza	ation - Soil		ing Location -B-58 (97.5 -100 ft)					AF No. 03-025		Air Quality [43	45 Days	
Ice Chest No. ERCO	2 501	Field I	oghook No. 7 356 1		COA 119143ES	10		ethod of Ship FEDERAL E	XPRESS		· ,	· · · · · · · · · · · · · · · · · · ·		
Shipped To TWYS C	-19-03 Pera	Offsite	Property No.	040	059		В	ill of Lading	Air Bill N	10. SEE	037	<		
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	Cool 4C	None	1								
Special Handling and/or S	toraga		Type of Container	G	G/P				1 :				T	
Special Handing and of S	rot #Re		No. of Container(s)	1	i									
			Volume	250mL	250mL									
	SAMPLE ANAL	LYSIS		See item (1) in Special Instructions.	Special	7								
Sample No.	Matrix *	Sample Date	Sample Time				State (\$		100					
B17RW4	SOIL	12-10-03	3 1245	X	7					TIE	70 B	17RU](
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The state of the s									-		<u> </u>		+	
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CHAIN OF POSSESSIO		Sign/Prin				CIAL INSTRU			· · · · · · · · · · · · · · · · · · ·	recipt The Johnson		. 1	7	
Relinquished By/Removed From Balinquished By/Removed From L 1000 # 1 00 -021 Belinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	12-11-63 100	Received By/Sto Received By/Sto Received By/Sto	C#1 MO.046 L Blinkmynladu 33 3728		rang 1600 (1) 03 (2) 1010 (The	e organics from the Chromium Hex - 7 Nickel-63: Gammorium-2321; Tritiu	e WTPH-I 196; NO2 : Spcc - R	D analysis. See 2/NO3 - 353.2; 5 adium (Radium	SAF COC ulfides - 90 -226, Radi u	Comments for holds: 30; Oil & Grease m-228); Techneti	ding time issue - 413.1	s. i o Thorium .	S= SE SC SI- W O- A- DS DL T-	
Relinquished By/Removed From 5J Crost & O. Maler 12	Date/Time 12 03 1100	O SJOALS Received By/Sto	11/12/203	ate/Time	1.	rersonner not a Relinquish sam Ref#28 on 1	ples fron	า 3728					V- V- X-	
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LABORATORY Received B SECTION	у			7	l'itle							Date/Time		
	lethod				er y fra	Dispose	d By					Date/Time		

FLUOR Hanford Inc.	CENTRA	AL PLATEAU CI	HAIN OF	CUSTO	DY/SAMPLE	E ANAI	YSIS RI	QUEST	T	F03-	025-044	Page <u>l</u>	of <u>1</u>
Collector JADR PASIS HIMUS	Company C	ontact	Telephone 373-568	No.		1	Project Co TRENT, S.	ordinator	Pri	ce Code		Data Tur	
Project Designation 200-LW-I/LW-2 Characterization - Soil	Sampling L			1			SAF No. F03-025		Air	Quality		45]	Days
Ice Chest No. ERC 02 501	Field Logbo	ield Logbook No. HNF · N · 36(o-) COA 119143ES10					Method of Shipment FEDERAL EXPRESS				· .		· ·
Shipped To Try 510-24:03 Received TMA)	Offsite Prop	perty No. AC	40 C	250	7		Bill of La	ling/Air B	ili No. 승년	0370	P	, ·	·
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	None .									
Special Handling and/or Storage	Ту	pe of Container	G	G/P									
	No	of Container(s)	250mL	1. 250mL									
		Volume											
SAMPLE ANALYSIS			See item (1) in Special Instructions	See item(2) Special Instruction	1 '								
Sample No. Matrix * Sam	ple Date	Sample Time		V		er in in		Taribi berha	instruction of				
B17RV2 SOIL 12	-7-3	10:30	X	<u>/</u>	_					1/4	700 3	1281	//
				·.			_				<u> </u>		
	(5)		·										Matrix *
Relinquished By/Removed From Date/Time 15:00 Received Date/Time 15:00 R	te trailer yed By/Stored In Workstored In	RMA Fridge In language In lan	te/Time 13 14 15 16/Time 15 16/Time 16 16/Time 16 16/Time 17 16/Time 17 16/Time 17 16/Time 17 16/Time	30 (1) -03 (2) -03 (1)	ECIAL INSTFe laboratory is to age organics from Chromium Hex. Nielel. 63; Giun Inorium-232); Trispersonnel not a Relinquish sam Ref # 114 on 1	analyze p. the WTP: - 7196; N. ma. Specthan = 13; available	H within 24 l I-D analysis O2/NO3 - 35 Radfuln [R: Garbon-14;	See SAF C	OC Con - 9030; adium-2	nnents for hold Oil & Grease 281 Technotic	ling time issue - 413.1	S	S-Soil SE-Schinent SC-Solid SI-Sludge W = Water O=Oil A-Air DS-Drum Liqu T-Tissue WI-Wipe L-Liquid V-Vegenation X-Other
	· · · · · · · · · · · · · · · · · · ·		Tit	le .]	Date/Time	
LABORATORY Received By SECTION Rel by Fedex 13/	114/152	0950 Rec	c.by	100	1111								

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD Date: Purchase Order / Project# / SAF#/SOW#/Release #: F03-025 Sample Custodian: LvLI Batch #: 03/21369 NOTE: EXPLAIN ALL DISCREPANCIES Airbill# 7923 8938 8227 Carrier Samples Hand Delivered or Shipped 2. Custody seals on coolers or shipping ☐ No Seals Comments □ No container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and 2 Yes □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC - 02 - 501 1.5 °C 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No ☐ No Seals signed and dated? 7. coc signed and dated? □ No · DYes Sample containers are intact? □ No All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? D No 12. Samples received within hold times? E Yes □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No 14. QC stickers placed on bottles designated by ☐ Yes □ No client? 15. Shipment meets LvLI Sample Acceptance 11 Yes □ No Policy? (Identify all bottles not within policy. See reverse side for policy)

☐ Yes

□ No

E No

Discrepancies

16. Project Manager contacted concerning

outside criteria)

discrepancies? name/date (or samples



21 January 2004

Mr. Steve Trent Fluor Hanford Inc. 825 Jadwin Ave. Richland, WA 99352

Subject: Contract No. 630

Analytical Data Package

Dear Mr. Trent:



LvLl Batch #	0312L429
SDG#	H2461
SAF#	F03-025
Date Received	12-15-03
# Samples	1 1
Matrix	Soil
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
Herbicides	
GC Alcohol	
Metals	,
Inorganics	Χ

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory Incorporated

Örlette S. Johnson Project Manager

 $r:\group\pm\orlette\tnu-hanford\data\fc_ltrs.doc$



Lionville Laboratory, Inc. INORGANIC ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15	/03	LVL LOT # :0312L429					
CLIENT ID /ANALYSIS	LVL #	M'	TX PREP #	COLLECTION	EXTR/PREP	ANALYSIS	
							
B183L4							
% SOLIDS CHROMIUM VI CHROMIUM VI CHROMIUM VI CHROMIUM VI NITRATE NITRITE NITRATE NITRITE NITRATE NITRITE	001 001 REP 001 MS 001 MSD 001 001 REP 001 MS		S 03L%S192 S 03LVI086 S 03LVI086 S 03LVI086 S 03LVI086 S 03LN3072 S 03LN3072 S 03LN3072	12/06/03 12/06/03 12/06/03	12/15/03 12/21/03 12/21/03 12/21/03 12/21/03 12/24/03 12/24/03	12/16/03 12/21/03 12/21/03 12/21/03 12/21/03 12/24/03 12/24/03	
CHROMIUM VI CHROMIUM VI CHROMIUM VI NITRATE NITRITE NITRATE NITRITE	MB1 BS MB1 BSD MB1 BS		S 03LVI086 S 03LVI086 S 03LVI086 S 03LN3072 S 03LN3072	N/A N/A N/A	12/21/03 12/21/03 12/21/03 12/24/03 12/24/03	12/21/03 12/21/03 12/21/03 12/24/03 12/24/03	



Analytical Report

Client: TNU-HANFORD F03-025 H2461

W.O.#: 11343-606-001-9999-00

LVL#: 0312L429

Date Received: 12-15-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.

- 2. The sample was prepared and analyzed in accordance with the methods checked on the attached glossary.
- 3. Sample holding times as required by the method and/or contract were met.
- 4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 5. The method blanks were within the method criteria.
- 6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
- 7. The matrix spike recoveries for Chromium VI and Nitrate Nitrite were within the 75-125% control limits.
- 8. The replicate analyses for Chromium VI and Nitrate Nitrite were within the 20% Relative Percent Difference (RPD) control limit.
- 9. Results for solid samples are reported on a dry weight basis.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

njp\i12-429

01-30-04

02

Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

Lionville Laboratory Incorporated WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

ASTM .	<u>SW846</u>	OTHER
% Ash D2216-80		
% Moisture, D2216-80		ILMO4.0 (e)
% Solids <u>√</u> D2216-80		ILMO4.0 (e)
% Volatile Solids D2216-80		
ASTM Extraction in Water D3987-81/85	5	
BTU D240-87		
CEC	9081	c
Chromium VI	/3060A/7196A	e e e e e e e e e e e e e e e e e e e
Corrosivity by coupon by pH	1110(mod) 9045C	
Cyanide, Total	9010B	ILMO4.0 (e)
Cyanide, Reactive	Section 7.3/9014	
Halides, Extractable Organic	9020B	EPA 600/4/84-008
Halides, Total	9020B	EPA 600/4/84-008
EP Toxicity	1310A	
Flash Point	1010	
Ignitability	1010	
Oil & Grease	9071A	
Carbon, Total Organic	9060	_ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions D240-87(mo	od) 5050	
Petroleum Hydrocarbons, Total Recoverable	9071	EPA 418.1
pH, Soil	9045C	
Sulfide, Reactive	Section 7.3/9030B	
Sulfide	9030B(mod)	
Specific Gravity D1429-76C/	D5057-90	
Sulfur, Total	9056	
Synthetic Preparation Leach	1312	
Paint Filter	9095A	
Other: Atrate Vetrite Method:	EPA353.2(mad.)	
Other: Method		

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

- 1. ASTM Standard Methods.
- USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

INORGANICS DATA SUMMARY REPORT 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461

LVL LOT #: 0312L429

WORK ORDER: 11343-606-001-9999-00

	•		* - +	-	REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
			=======	=====		=======
-001	B183L4	% Solids	92.5	8	0.01	1.0
		Chromium VI	0.22 u	MG/KG	0.22	1.0
		Nitrate Nitrite	1.9	MG/KG	0.21	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461

LVL LOT #: 0312L429

MORK	OPDER.	11343-606-001-9999-00

					REPORTING	DIFOLION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
======	=======================================	=======================================		=====	=======	=======
BLANK10	O3LVI086-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
	•					•
BLANK10	03LN3072-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0

INORGANICS ACCURACY REPORT 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0312L429

		•	SPIKED	INITIAL	SPIKED	100	DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	%RECOV	FACTOR (SPK)
**==##=				======	=====	======	========
-001	B183L4	Soluble Chromium VI	4.4	0.22 u	4.3	102.4	1.0
•		Insoluble Chromium VI	1360	0.22 u	1350	100.9	100
		Nitrate Nitrite	8.5	1.9	6.0	109.9	1.0
BLANK10	03LVI086-MB1	Soluble Chromium VI	. 4.0	0.20u	4.0	100.0	1.0
		Insoluble Chromium VI	1310	0.201	1250	105.2	100
BLANK10	03LN3072-MB1	Nitrate Nitrite	5.1	0.20u	5.0	102.2	1.0

INORGANICS PRECISION REPORT 12/31/03

CLIENT: TNU-HANFORD F03-025 H2461

LVL LOT #: 0312L429 .

WORK ORDER: 11343-606-001-9999-00

			INITIAL				DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	RPD		FACTOR (REP)
PESEED .	*********		=======	========	======		**========
-001REP	B183L4	Chromium VI	0.22u	0.22u	NC	•	1.0
	4.3	Nitrate Nitrite	1.9	1 8	5.5		1.0

Lionville Laboratory Use Only

03121429

Custody Transfer Record/Lab Work Request Page ______ of _____

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS



Client 1	NU.	Hantoro	F03	-025			Refriger	ator#																
Fet Final Proj	l. Samı	olina Date					#/Tune 4	Container	Liquid					7.86			170	. F. W.		400		93		
Project #		(1343 -	606-001	- 9999-00			witype .	Container	Solid								200	. **-55	115	77.00			\$ 3.24°	
							Volume		Liquid	10 to 10.45						5.1%		4			<i>i</i>		and a	
Lionville Labo	ratory	Project Man	ager	0.5			Volume		Solid					7. 4					120			(数)(2) 公文		
ac sees		Del 570	TAT	30 day	٠د		Preserv	atives							-72	5.44 are			بسر	1.4				
			the state of the state of	•			ANALY	SES		<u> </u>		ANIC	-					RG						
Date Rec'd	12.	26-03	Date Due	1-14-04			REQUE		-	Š.	BNA	Pest/ PCB	Herb				Metal	8						
Date Neo u	Γ	<u></u>	. Date Date		1		· ·	T	Γ	1-		1	1	<u> </u>	Lionv	ille La		ory Us	e Only	<u> </u>	l	<u> </u>		<u> </u>
MATRIX CODES:		April 1				itrix IC	}	} .		-		1	T ·	1	Γ			T			·			
S- Soll	Lab ID	edition.	Client ID/Descrip	otion		osen V)	Matrix	Date Collected	Time Collected	ı									I CR L Insnz		1			1
SE - Sediment SO - Solid	1, 5														ļ				HH					
SL - Sludge W - Water		B . 0 c		Karana da jaran da	MS	MSD	S	-		1-	 	-								14.				
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A - Air DS - Drum	<u></u>					<u> </u>			<u> </u>		ļ.,,		ļ	-		t des						17.7		
Solids DL - Drum											1	ļ		great.		134			- 0		,			-
Liquids L EP/TCLP										ļ					9	A 22								
Leachate WI - Wipe		1													4								<u> </u>	
X - Other		A A															<u> </u>					150 173 g	<u> </u>	
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FLUOR Hanford	inc.	CE	NTRAL PLATEAU (CHAIN OF	CUST	ODY	/SAMPL	E ANA	LYSIS REC	UEST	F(3-020-002	Page 1	of 1
Collector Pope/Pfister/Hughes		Stev	any Contact re Trent	Telephor				1	Project Cool TRENT, SJ		Price Code	8N		rnaround Days
Project Designation 216-B ₃ 26 Characterization Sam	pling - Soil Sampling	Sampl C32	C3245 (9.5-12-11) (3.5-16.0 f+) EG						E03-020 F03-925 Air Quanty					
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Special Handling and/or Sto	orage		Type of Container	aG	aG			ļ						
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	•		Volume	120mL	60n	L								
	SAMPLE ANAI	LYSIS		Chromium Hex - 7196; NO2/NO3 - 353,2	See item Speci Instruct	inl								
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CHAIN OF POSSESSION	Date/Time /503	Sign/Prin Received By/Sto		Pate/Time			AL INST		* * *					S*Soil
Relinquished By/Removed From	de 063	mo-026		/	00	(1) Iso 14: Tri	topic Thoriu ium - H3; G	m {Thoriu amma Spe	m-232}; Stronti c - Radium (Ra	um-89,90 T dium-226, Rac	otal Sr; Nickel- lium-228}	-63; Technetium-	99; Carbon-	SE=Sediment SO=Solid
Relinquished By/Removed From MO-026 Fridge?	Date/Lime	Received By/Sto	ored in		230		,		•			,		Si=Sludge W = Water O=Oil
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FINAL SAMPLE Disposal Met						.	Dien	osed By	·	· · · · · · · · · · · · · · · · · · ·			Date/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HAWFORD Date: Purchase Order / Project# / 103-0 ZO SAF# SOW# / Release #: LvLI Batch #: Sample Custodian: 03/21,368 NOTE: EXPLAIN ALL DISCREPANCIES 7923 8938 8227 Carrier Lew So Airbill# Samples Hand Delivered or Shipped □ Yes Custody seals on coolers or shipping Comments □ No ☐ No Seals container intact, signed and dated? 3. Outside of coolers or shipping containers are 2 Yes □ No free from damage? 4. All expected paperwork received (coc and □ Yes □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC-02-501 Temp °C 5. Samples received cooled or ambient? Custody seals on sample containers intact, JZ Yes □ No. 1 ☐ No Seals signed and dated? 7. coc signed and dated? □ No □ Yes . □ Xes Sample containers are intact? □ No Yes All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? □ Yes □ No 14. QC stickers placed on bottles designated by ☐ Yes □ No D/N/A client? 15. Shipment meets LvLI Sample Acceptance ☐ Yes □ No Policy? (Identify all bottles not within policy. See reverse side for policy)

☐ Yes

□ No

□ No

Discrepancies

SR-002-B

16. Project Manager contacted concerning

outside criteria)

discrepancies? name/date (or samples





Mr. Steve Trent Fluor Hanford Inc. 825 Jadwin Ave. Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLl Batch #	0312L402
SDG#	H2461/H2470
SAF#	F03-025
Date Received	12-18-03
# Samples	4
Matrix	Soil
Volatiles	Χ
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	X
Herbicides	
GC Alcohol	
Metals	
Inorganics	Χ

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Libnville Laboratory Incorporated

Örlette S. Johnson Project Manager

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Lionville Laboratory, Inc. VOA ANALYTICAL DATA PACKAGE FOR TNU-HANFORD F03-025, 112410 | H2461

(X: 1/16/

VL LOT # :0312L402

CLIENT II)	LVL	#	MTX	PREP #	COLLECTION	EXTR/PREP	•	ANALYSIS
								•	
B17RT3		001		S	03LVX403	12/06/03	N/A		12/22/03
B17RT3		001	MS	S	03LVX403	12/06/03	N/A	*.	12/22/03
B17RT3	•	001	MSD	S	03LVX403	12/06/03	N/A		12/22/03
LAB QC:								÷ .	
VBLKSI		MB1		s	03LVX403	N/A	N/A		12/22/03
VBLKSI		MB1	BS	s	03LVX403	N/A	N/A		12/22/03

DATE RECEIVED:



Client: TNU-HANFORD F03-025

LVL#: 0312L402 Q

SDG/SAF #H2470/F03-025

HZ461 05; 1/16/04

GC/MS VOLATILE

One (1) soil sample was collected on 12-06-2003.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 12-22-2003.

W.O. #: 11343-606-001-9999-00

Date Received: 12-18-2003

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- All results presented in this report are derived from a sample that met LvLI's sample 1. acceptance policy.
- The sample was received outside holding time; consequently, the sample was analyzed within 2. 4-days from sample receipt.
- Non-target compounds were not detected in the sample. 3.
- All surrogate recoveries were within EPA QC limits. 4.
- 5. All matrix spike recoveries were within EPA QC limits.
- All blank spike recoveries were within EPA QC limits. 6.
- The method blank contained the common laboratory contaminant Methylene Chloride at a 7. level less than the CRQL.
- Internal standard area and retention time criteria were met. 8.
- "I certify that this sample data package is in compliance with SOW requirements, both 9. technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

f. Michael Taylor

President

Lionville Laboratory Incorporated

som\group\data\voa\tru-hanford\0312-402.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 4 pages.

02

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- **D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closes internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

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GLOSSARY

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, **Z** = Indicates Spiked Compound.

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TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: Manually added peak not found by automatic quan program.
- PA Peak Assignment: Quan report was changed to reflect correct peak assignment.
- RI Routine Integration: Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP Split Peak: The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- **CB Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI Proper Integration: A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

LVL-21-21-035/A-08/93



Volatiles by GC/MS, HSL List

Report Date: 12/30/03 11:21

Client: TNU-HANFORD F03-025, pt 24 Towork Order: 11343606001 Page: 1a RFW Batch Number: 0312L402 H2461 05 1/16/04 B17RT3 C Cust ID: B17RT3 **B17RT3** VBLKSI VBLKSI BS Sample. RFW#: 001 001 MS 001 MSD 03LVX403-MB1 03LVX403-MB1 Information Matrix: SOIL SOIL SOIL SOLL SOTT D.F.: 0.962 1.02 1.02 1.00 1.00 Units: uq/Kq ug/Kg ug/Kg ug/Kg ug/Kg Toluene-d8 105 102 98 8 102 왕 98 왕 Surrogate Bromofluorobenzene 86 83 ջ 79 왕 86 ž 83 앓 Recovery 21,2-Dichloroethane-d4 82 77 77 76 88 $= -\frac{1}{2} = -\frac{1}{$ U 10 IJ 10 TT 10 · U 10 IJ Chloromethane 10 ŢŢ 17 ŢŢ Bromomethane 10 U 10 10 10 10 U Vinyl Chloride 10 U 10 U 10 U 10 U 10 U Chloroethane 1.0 IJ 10 IJ 10 IJ 10 U 10 U Methylene Chloride_____ 10 В 13 B 13 B 4 ιJ 4 BJ 10 ŦŢ 10 U 101 IJ 10 U Acetone 10 5 U 5 Carbon Disulfide ŢΊ 5 ŢŢ 5 Ü 5 U 1,1-Dichloroethene_____ 5 99 98 U 91 1,1-Dichloroethane 5 U 5 U 5 ٠[] U 5 U 5 1,2-Dichloroethene (total) TT IJ U 5 TT 5 TT [] Chloroform _____ II 5 IJ 1,2-Dichloroethane IJ 5 IJ IJ IJ Ü 1.0 IJ 10 10 U 10 IJ 1.0 2-Butanone U IJ 1.1.1-Trichloroethane 5 TI 5 TŦ TT U U Carbon Tetrachloride 5 Tī 5 Ũ 5 IJ Bromodichloromethane U TT ĽŦ 5 5 1,2-Dichloropropane TT TT 5 5 U 5 ŢĴ 5 ΤŢ Τī cis-1,3-Dichloropropene 5 U 5 Trichloroethene IJ 92 93 ·II 92 Dibromochloromethane 5 U 5 U TT IJ IJ 1,1,2-Trichloroethane 5 IJ 5 U 5 U 5 5 U 5 U 93 ջ 93 IJ 88 Benzene Trans-1,3-Dichloropropene TT 5 IJ 5 IJ 5 ŢŢ 5 5 IJ 5 U 5 U 5 TT 5 IJ Bromoform 4-Methyl-2-pentanone 10 U 10 U 10 10 U 10 IJ 2-Hexanone 1.0 10 10 10 U 10 IJ Tetrachloroethene 5 5 5 5 П ΤŢ . 5 IJ 1,1,2,2-Tetrachloroethane ij 5 TT 5 IJ 5 U 5 IJ IJ 103 95 Toluene 103

*= Outside of EPA CLP OC limits.

kew hat in Number: 0	Cust ID:	B17RT3	B17RT3 H240/ B17RT3	VBLKSI	VBLKSI BS	
	RFW#:	001	001 MS 8 001 MSD	03LVX403-MB1	03LVX403-MB1	
Chlorobenzene		5 U	94 % 94 %	5 U	90 %	
Ethylbenzene		5 U	5 Ú 5 U	5 U	5 Ü	•
Styrene		5 U	5 U 5 U	์ 5 บ	5 U	
Xylene (total)		5° U	5 U 5 U	5 Ū	5 U	

Lionville	Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of ____

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	CONVICTEDA	BOHATORY INC.

03/26 402

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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FLUOR Hanford	Inc.	CEN	TRAL PLATEAU (CHAIN OF	CUSTOD	Y/SAMPLI	E ANA	LYSIS REC	UEST	F03	-025-006	Page 1	of 2
Collector PADEAS	8/HUMOS	Compa TRE	ny Contact NT, STEVE	Telepho 373-5				Project Cool TRENT, SJ	dinator	Price Code	8N		rnaround _
roject Designation 200-LW-1/LW-2 Characteriza	tion - Soil	Sampli 216-	ng Location B-58 (35 - 37.5 ft)					SAF No. F03-025		Air Quality		45	Days
ce Chest No.			ogbook No. F - 356		COA 119143ES	0		Method of S FEDERAL	nipment EXPRESS				
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POSSIBLE SAMPLE HAZAI	RDS/REMARKS		Preservation	Cool 4C	None								
Had tuto f		·	Type of Container	G	G/P								
Special Handing and/of Si	orage		No. of Container(s)	Î	1./								
			Volume	250mL	250mL								
	SAMPLE ANA	LYSIS		See item (1) in Special Instructions.	Sp cial								
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Sample No.	Matrix *	Sample Date	Sample Time		4//		14A 30					Sa ta da da	
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CHAIN OF POSSESSIO Relinquished By/Removed From Relinquished By/Removed From	Date/Time 18:	Sign/Print Received By/Stor Received By/Stor	ed In D ac RMA 26B	late/Time 1 7 102-8-3 late/Time 0 8	3:00 The li range 3 8 8 8 (1) (2	organics from	analyze p the WTP - 7196: N	H within 24 hou H-D analysis, S O2/NO3 - 353.2	ee SAF COC C	ceipt. The labor comments for ho	ding time issue:	5.	Matrix * S=Soli SE=Sediment SO=Solid SI=Sludge
Site fridge RMA 2 Relinquished By/Removed Bent KWIN HUONS	68 12-9-3 24 Date/Time O 40 D-9-03	Received By/Stor	ed In Braymer	Millime 17	(五) (Tho	licke l 63, Gu m rium 232); Fri	ma Spec tion - 113	- Radium (Radii ; Garbon 14; Str	m-226, Radiu ontium-99,98 =	Total Sr	P 12/2/	,	W = Water O=Oli A=Air DS=Drum Soli DL=Drum Liq T=Tissue
telinquished By Removed From A	Date Time	Possing Russia	40 104-0	Pate/Time BJY3 Pate/Time	1000								Wt=Wipe L=Liquid V=Vegetation
KIT#ZIDIFO	3 1000 Date/Time 1/03	DIOR KLE # 2	MER MINING	5-11-03	3								X=Other
LABORATORY Received By SECTION		, , ,	· · · · · · · · · · · · · · · · · · ·		itle							Date/Time	
FINAL SAMPLE Disposal M	ethod			· · · · · · · · · · · · · · · · · · ·		Dispo	osed By					Date/Time	
DISPOSITION								·					

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FLUOR Hanfo	rd Inc.	CF	ENTRAL PLATEAU (CHAIN OF	CUSTO	Y/SAMPL	E ANA	LYSIS REQU	EST	F03	-025-002	Page 1	of 1
Collector POPE / HuGH	ES / Pfister	TF	pany Contact RENT, STEVE	Telephone	9 -			Project Coordi TRENT, SJ	nator	Price Code 8N Da Air Quality Divining the laboratory is to report kerose somments for holding time issues. Divining time issues.	Data Tu	rnaround	
Project Designation 200-LW-1/LW-2 Characteri		Sam 21	pling Location (12.5-15 ft)	1-13.	2 C \		•	SAF No. F03-025	A	Air Quality	de 8N ality laboratory is to report ker or holding time issues. rease - 413.1 phaetium-99; isotopie The 25/03	45	Days
Ice Chest No. CRC O	1037	Field	l Logbook No.		COA 119143E	S10		Method of Ship FEDERAL E					
Shipped To EBERLINE SER VICES (Fe	(UZS/03 ormorly TMA), COA	4A Offsi	ite Property No. RS	R 18	58	26		Bill of Lading/	Air Bill N	· NA			
POSSIBLE SAMPLE HAZZ			Preservation	Cool 4C	None					Price Code 8N Data Air Quality Sept. The laboratory is to report kerosene omments for holding time issues. Description of the comment of			
Special Handling and/or		\	Type of Container	G	G/P						ality Data Tu ality Data Tu 45 A laboratory is to report kerosene for holding time issues. Grease - 413.1 polymetium-99, isotopic Thorium 28/03		Ì
3			No. of Container(s)	1	1/							•	
			Volume	250mL	250 L	:							
	SAMPLE ANAI	YSIS		See item (1) in- Special Instructions.	See item (2) in Special Instructions	1							
Sample No.	Matrix *	Sample Date	Sample Time	k ar it er d					100				3
B17RT0	SOIL	12-6-	3 10:30				<u></u>						
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Relinquished By/Removed From Relinquished By/Removed From NO -O 26 Fridge Relinquished By/Removed From Relinquished By/Removed From South Affective Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	Date/Time 2-6- Bate/Time 2-7 # 2 2/8/03 Date/Time 24 Marris 12/8/03	Received By/St Mo o b Received By/St Gree / ho Received By/St Received By/St Received By/St	pred In Digett D	ate/Time 24-3/8 ate/Time 22/8/0 ate/Time ate/Time ate/Time	7 (1) (2) (71h)	e organics from Chromium Hex Nickel-63: Gam	analyze p the WTP 7196; N 7196	H within 24 hours of H-D analysis. See StockNO3 - 353.2; StockNO3 - 353.2; Stocknown 14; Strontics of the Market Strontics of	SAF COC Co ulfides - 903 226 Padium um-89,90	omments for hol 0; Oil & Grease 1- 228}; Techneti Total St	ding time issue - 413.1 ium-99 , Isotopi	s.	Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids D1-Drum Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other
	Rv .	<u> </u>	<u> </u>	Title								Date/Time	
LABORATORY Received E SECTION	<i></i>					Diese	and Du					Date/Time	
FINAL SAMPLE Disposal M DISPOSITION	Method	, ·				Dispo	osed By					~	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD

Date: 12.18 B

Purchase Order / Project# / SAF# SOW# / Release #:

LvLI Batch #:

03/26 402

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES Airbill# 7909 Samples Hand Delivered or Shipped Custody seals on coolers or shipping □Yes □ No ☐ No Seals Comments container intact, signed and dated? 3. Outside of coolers or shipping containers are □ Y'es □ No free from damage? 4. All expected paperwork received (coc and □ No other client specific information) sealed in plastic bag and easily accessible? Temp 55.5°C Cooler # ERC-02 - 505 5. Samples received cooled or ambient? L 01-037 Custody seals on sample containers intact, □ No ¹ ☐ No Seals signed and dated? 7. coc signed and dated? □ No Sample containers are intact? · 🗆 X 65 □ No 9. All samples on coc received? All samples ☐ Yes □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? □ No □ N/A 14. QC stickers placed on bottles designated by ☐ Yes □ No N/A client? 15. Shipment meets LvLI Sample Acceptance ₽ Yes □ No Policy? (Identify all bottles not within policy. See reverse side for policy) 16. Project Manager contacted concerning ☐ Yes □ No DNC discrepancies? name/date (or samples

outside criteria)

Discrepancies



Lionville Laboratory, Inc. DRO ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

•									
CLIENT I	D	1 2	LVL _.	#	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
		· · · · · · · · · · · · · · · · · · ·		·		-			
B17RT3			001		s	03LE1649	12/06/03	12/19/03	01/02/04
B17RT3			001	MS	S	03LE1649	12/06/03	12/19/03	01/02/04
B17RT3		• •	001	MSD	S	03LE1649	12/06/03	12/19/03	01/02/04
LAB QC:									
· ·					-			· · · · · · · · · · · · · · · · · · ·	
BLK			MB1		s	03LE1649	N/A	12/19/03	01/02/04
BLK		. :	MB1	BS	S	03LE1649	N/A	12/19/03	01/02/04

Jeston Joshan



Analytical Report

Client: TNU-HANFORD F03-025

LVL#: 0312L402

SDG/SAF#: H2461/F03-025

W.O. #: 11343-606-001-9999-00

Date Received: 12-18-03

DIESEL RANGE ORGANICS

One (1) soil sample was collected on 12-06-03.

The sample and the associated QC samples were extracted on 12-19-03 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 01-02-04. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8015. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. All required holding times for extraction and analysis have been met.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. The blank spike recovery was within acceptance criteria.
- 6. All matrix spike recoveries were within acceptance criteria.
- All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

pef\r:\group\data\dro\tnu hanford\12L-402.doc

1/16/04 Date

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1 RFW Batch Number: 0312L402 BLK BS Cust ID: B17RT3 B17RT3 B17RT3 BLK 03LE1649-MB1 03LE1649-MB1 Sample 001 001 MS 001 MSD RFW#: SOIL SOIL SOIL SOIL Information Matrix: SOIL 1.00 1.00 1.00 D.F.: 1.00 1.00 mg/kg mg/kg mg/kg mg/kg mg/kg Units: 89. % 80 78 91 p-Terphenyl 82 12.0 U 78 12.3 U 74 77 Diesel Range Organics 12.0 U 12.0 U 20.5 U 20.5 U Motor Oil 12.3 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Vy Vy

Report Date: 01/15/04 17:53

13/26 4		FIELD PERSO	NNEL	CON	IPLETI	E ONL	Y SHAD	ED A	REAS	S			<u></u>				D	4		A THE CA	нежуўся	RYING
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Est. Final Pro	. Samp	ling Date		#	Луре Со	ntalner	Liquid	39.00	A POST	** 7 **		λ.1 (7.2) λ.1 (7.2)	/g	da Wei	1 % ib	ne z v Projek	ji se de					
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MATRIX		16	Matrix	<u>, </u>							Ţ		Lionv	ille La		ry Us	e Only	/	1			
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Received Relinquished Time Date 1040

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"COMPOSITE	REWR	TTEN	
WASTE"			

2) Ambient or Chilled

3) Received in Good Condition Y of N

4) Samples
Properly Preserved
Y or N

5) Received Within Holding Times

Discrepancies Between Samples Labels and COC Record? Y or N NOTES:

3) Present on Sample Y or N

4) Unbroken on Sample Y or N **COC Record Present**

Upon Sample Rec't Y or N Cooler

Y or N Temp. _

.0312-100 Page | of | CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-025-003 FLUOR Hanford Inc. **Project Coordinator** Company Contact Telephone No. Collector Price Code 8N **Data Turnaround** TRENT, SJ 373-5689 TRENT STEVE 45 Days SAF No. Project Designation Sampling Location Air Quality F03-025 216-B-58 (17.5 - 20 ft) 200-LW-1/LW-2 Characterization - Soil COA Method of Shipment Field Logbook No. 1330-1 Ice Chest No. oz 02 505 FEDERAL EXPRESS 119143ES10 Bill of Lading/Air Bill No. A040 064 Offsite Property No. Shipped To SEE OSPC EBERLINE SERVICES (Formerly TMA) POSSIBLE SAMPLE HAZARDS/REMARKS Cool 4C Cool 4C Preservation aG aGs* INT 12 12 13 Type of Container Special Handling and/or Storage No. of Container(s) millio 120mL 40mL Volume HOML VOA - 8260A See item (1) in Special (TCL) Instructions. SAMPLE ANALYSIS Sample Time Sample Date Sample No. Matrix * 1545 12-10-02 B17RT3: SOIL 1843. 1816 MOT 12-11-03 Slet Matrix * CHAIN OF POSSESSION SPECIAL INSTRUCTIONS Sign/Print Names The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene 1530 Date/Time S=Soil range of ganics from the WTPH-D analysis. See SAF COC Comments for holding time issues. SE=Sediment SO=Solid (1) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum SI=Sludge W = Water hydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G O=Oil Date/Time A=Air DS=Drum Solids DL=Dron Liquids T=Tissue Date/Time Date/Time W!=Wipe 1040 1040 L=Liquid V=Vegetation Date/Time Received By/Stored In Date/Time Relinguished By/Removed From X=Other Date/Time Received By/Stored In Date/Time Relinquished By/Removed From Title Date/Time Received By LABORATORY SECTION Disposed By Date/Time Disposal Method FINAL SAMPLE DISPOSITION

Fluor Ha	nford, Inc.	CENTRA	L PLATEAU C	HAIN OF	CUSTOD	Y/SAMPLE	ANALYS	IS REQU	EST			Page	Lot 2
Collector DDL	hister Hi	The Sompany C	78ht 5t	Telephon	273	-56	39 界	olect Coord	pator p	rice Code		Data Tu	rnaround
Project Designation	140-2(m	Sampling Lo	cation -58	(35	-37	54	SA	F No. 03-0	•	ir Quality			
ice Chest No.	02 505	- Field Logbo	ok No.		COA	3651	M	thod of Shi		PEXI	nass		
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LABORATORY Received B	у			ī	itle		-		•		Da	ale/Time	
FINAL SAMPLE Disposal M	elhod	·				Dispo	sed By			· .	Da	ate/Time	

FLUOR Hanfor	d Inc.	CE	NTRAL PLATEAU C	CHAIN OF	CUSTOD	Y/SAMPL	E ANAI	LYSIS REQU	EST	F03	8N Data To 45 45 Asia Company of the control of t		of 24				
Collector PADE AB	C/HAMOS	Compo	any Contact ENT, STEVE	Telephor 373-56	ie No. 589			Project Coord TRENT, SJ	nator	Price Code	t. The laboratory is to report kerosene ments for holding time issues. Oil & Grease - 413.1 139), Tochnetium 99, Isotepic Thorium-						
Project Designation 200-LW-1/LW-2 Characteriz	ation - Soil	Sampl 216	ing Location -B-58 (35 - 37.5 ft)					SAF No. F03-025		Price Code 8N Data 1 Air Quality No. Seceipt. The laboratory is to report kerosene Comments for holding time issues. O30; Oil & Grease - 413.1 Jun 218), Technolium 99; Isotepia Thorium 12/2/3	45	Days					
lce Chest No.		Field !	Logbook No. VF - 356		COA 119143ES	10		Method of Ship FEDERAL E	ment XPRESS								
Shipped To WYS 10-	29-03 merly TMA) 200 C	Offsite	e Property No.	·				Bill of Lading	Air Bill N	0.	Code 8N Data To 45 Quality						
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	Cool 4C	None												
Special Handling and/or S	B17RWO		Type of Container	G	G/P												
Special reasoning and or	,torage		No. of Container(s)	1 .	1				<u> </u>								
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	SAMPLE ANAL	YSIS		See item (1) in Special Instructions,	See iten (2) in Special Instructions.						b						
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	JOR Hanford Inc. CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPL								REQUE	ST	F03-	-025-002	Page <u>1</u>	of <u>1</u>
Collector POPE / Hugte	1 / Parster	Comp TR	any Contact ENT, STEVE	Telepho	ne No. 689			Project TRENT	Coordina , SJ	tor P	rice Code	8N	Data Tur	- 1
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Special Handling and/or St	torage		No. of Container(s)	1	1/-									
			Volume	250mL	250 L									
	SAMPLE ANAI	YSIS		See item (1) i Special Instructions	Special		:							
Sample No.	Matrix *	Sample Date	Sample Time					S.O A						
B17RT0	SOIL	12-6-3	3 10:30		 									
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CHAIN OF POSSESSION		Sign/Prit				CIAL INSTR								Matrix *
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Relinquished By/Removed From Relinquished By/Removed From S.) GALE Al. Sch. 12	Date/Time /24 Marine /2/8/0 Date/Time	Received By/Sto	Sign of	ate/Time [*] ウタ <u>クさ</u> ate/Time	2 45				9	Spor	- 10/28/	103		A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid
Relinquished By/Removed From	Date/Time	Received By/Sto	ored In D-18-03	ate/Time 104 ate/Time		ersonnel not a Relinquish san Lef#//A_on_/								V=Vegetation X=Other
LABORATORY Received By SECTION				7	itle							I.	Date/Time	
FINAL SAMPLE Disposal Me	thod					Dispo	sed By						Date/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFOR

Date: 12.18.03

Sample Custodian:

Purchase Order / Project# /

free from damage?

signed and dated?

coc signed and dated?

received on coc?

Sample containers are intact?

SAF# SOW# / Release #:

LvLI Batch #:

03/26 402

NOTE: EXPLAIN ALL DISCREPANCIES Airbill# 7909 Samples Hand Delivered or Shipped 2. Custody seals on coolers or shipping Comments □ No ☐ No Seals **□** Yes container intact, signed and dated? 3. Outside of coolers or shipping containers are □-Yes □ No 4. All expected paperwork received (coc and ☐ Yes □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # EKC-02 - 505 5. Samples received cooled or ambient? 101-037 6. Custody seals on sample containers intact, □ No ☐ No Seals □ No · 🛚 Yes □ No E Yes 9. All samples on coc received? All samples □ No 10. All sample label information matches coc? □ No

11. Samples properly preserved? □ Yes □ No 12. Samples received within hold times? □ No Short holds taken to wet lab?

13. VOA, TOC, TOX free of headspace? □ No

14. QC stickers placed on bottles designated by ☐ Yes client?

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)

Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)

□ No

-Ð Ýes

☐ Yes

□ No

□ No

□ No Discrepancies

□ N/A

E N/A



Lionville Laboratory, Inc. GRO ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

٠.	CLIENT	ID		LVL #	MTX	PREP #	COLLECTION	EXTR/PREP		ANALYSIS
		<u> </u>	Av _{rei} si						•	
	B17RT3			001	S	03LVJC23	12/06/03	N/A	· .	12/23/03
	B17RT3			001 MS	S	03LVJC23	12/06/03	N/A	•	12/23/03
	B17RT3		* .	001 MSD	S	03LVJC23	12/06/03	N/A		12/23/03
Li	AB QC:						•			
7	TBLKNT TBLKNT			MB1 MB1 BS	s s	03LVJC23	N/A N/A	N/A N/A		12/23/03 12/23/03





Analytical Report

W.O. #: 11343-606-001-9999-00

Date Received: 12-18-03

Client: TNU HANFORD F03-025

SDG/SAF#: H2461/F03-025

LVL#: 0312L402

GASOLINE RANGE ORGANICS

One (1) soil sample was collected on 12-06-03.

The sample and the associated QC samples were prepped and analyzed according to Lionville Laboratory SOPs based on SW846 method 8015 for Gasoline range organics (GRO) on 12-23-03. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. The sample was analyzed three days outside of recommended hold time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. The blank spike recovery was within acceptance criteria.
- 6. All matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

pef/Rrgroup/data/gro/tnu/\12L-402.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 0466018 Batch: 0312 L 402 Parameter: 6500 Rome from the Samples: All Matrix: 5003 Initiator: John Lock. Samples: Bil Date: Method: sw846/MCAWW/CLP/ Client: Prep Batch: 03L レゴ (2) 1. Reason for SDR __Client Request a. COC Discrepancy __ Tech Profile Error __ Sampler Error on C-O-C Transcription Error __ Wrong Test Code __ Other ___ b. General Discrepancy __ Container Broken __ Insufficient Sample* __ Missing Sample/Extract* __ Wrong Sample Pulled __ Label ID's Illegible __ Hold Time Exceeded Preservation Wrong Received Past Hold Improper Bottle Type Not Amenable to Analysis Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: c. Problem (Include all relevant specific results; attach data if necessary) SAmples in 3 Days part hold. 2. Known or Probable Causes(s) SAMPLES received 12 Days into hold, on Friday. 3. Discussion and Proposed Action Other Description: Re-log __ Entire Batch NaxT. Following Samples: Re-leach Re-extract Re-diaest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructions...signature/date: V Concur with Proposed Action Disagree with Proposed Action: See Instruction Include in Case Narrative Client Contacted: Date/Person Add Cancel 5. Final Action...signature/date: Other Explanation: Verified re-[log][leach][extract][digest][analysis] (circle) Included in Case Narrative Hard Copy COC Revised Electronic COC Revised **EDD Corrections Completed** When Final Action has been recorded, forward original to QA Specialist for distribution and filing. Distribution of Completed SDR Route Distribution of Completed SDR Route X Initiator Metals: Beegle X Lab General Manager. M. Taylor Inorganic: Perrone

GC/LC: Kiger

Admin: Soos

Other:

MS: Rychlak/Layman Log-in: Melnic

X Project Mgr. Stone/Johnson/Haslett

X Technical Mgr. Wesson/Daniels X QA (file): Alberts

Data Management: Feldman

Sample Prep: Beegle/Kiger



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

R:/SHARE/GCVOLATILE/GCVOLATILEGLOS.DOC

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1 RFW Batch Number: 0312L402 B17RT3 B17RT3 TBLKNT TBLKNT BS Cust ID: B17RT3 001 MS 03LVJC23-MB1 Sample 001 MSD 03LVJC23-MB1 RFW#: 001 SOIL SOIL SOIL SOIL Information Matrix: SOIL 1.00 1.00 D.F.: 1.00 1.00 1.00 UG/KG UG/KG UG/KG UG/KG UG/KG Units: 88 95 106 110 Fluorobenzene 99 8 30 U Gasoline Range Organics (GRO) 30 U 109 73 왕 110

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Ag 11.1/2M

Report Date: 01/15/04 16:59

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Lionville Laboratory	z Hsã Only i	
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Custody Transfer Record/Lab Work Request Page 1 of ____

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03/26 402

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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	- 1-3			WA	STE"	1 '																	

Page 1 of 1 CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-025-003 FLUOR Hanford Inc. Project Coordinator Telephone No. Collector Company Contact **Data Turnaround** Price Code 8N 373-5689 TRENT, SJ TRENT, STEVE 45 Days SAF No. Sampling Location Air Quality Project Designation F03-025 216-B-58 (17.5 - 20 ft) 200-LW-1/LW-2 Characterization - Soil COA Method of Shipment Field Logbook No. Ice Chest No. 欧E02505 FEDERAL EXPRESS 119143ES10 Bill of Lading/Air Bill No. A040064 Offsite Property No. Shipped To EBERLINE SERVICES (Formerly TMA) POSSIBLE SAMPLE HAZARDS/REMARKS Cool 4C Cool 4C Preservation aGs* aG INT 12 12:03 Type of Container Special Handling and/or Storage No. of Container(s) tmiD4h 40mL Volume HOME VOA - 8260A See item (1) in Special (TCL) Instructions. SAMPLE ANALYSIS Sample Date Sample Time Matrix * Sample No. 1545 12-6-03 **B17RT3** SOIL Set Matrix * SPECIAL INSTRUCTIONS MOJ 12-11-03 Sign/Print Names CHAIN OF POSSESSION The laboratory is to analyze pH within 24 hours of sample receipt/ The laboratory is to report kerusene 1530 Date/Time S=Soil range of ganics from the WTPH-D analysis. See SAF COC Comments for holding time issues. SE=Sediment SO=Solid (1) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum SI=Studge W = Water Llydrocarbons - kerosene range); TPH-Gasoline Range - WTPH-G O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Received By/Stored In Date/Time Date/Time WI=Wipe ,040 1040 12-1803 L=Liquid V=Vegention Date/Time Date/Time Received By/Stored In Relinquished By/Removed From X=Other Date/Time Date/Time Received By/Stored In Relinquished By/Removed From Title Date/Time Received By LABORATORY SECTION Disposed By Date/Time FINAL SAMPLE Disposal Method DISPOSITION

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Fluor H	anford, Inc.	CEN	TRAL PLATEAU	CHAIN OF	CUSTOD	Y/SAMPL	E ANALY	SIS REQU	EST			Page _	Lof_
Collector	thistor H	1) ho Compa	nyeomach 5	Telephoi	がとうつ	-50	29 4	roject Coord	linator	Price Code		Data T	urnaround
Project Designation	1/1/2-200	Sampli	ng Location -58	1125	5-37	50	s	AF No.	25	Air Quality			
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Shipped To 17512/10/2	Recra	Offsite	Property No. As	400	64			ill of Lading	/Air Bill No). Luce	937	<u>د</u>	
Possible san	MPLE HAZARDS/REM	ARKS	Preservation	(00146	NONE								- 1
Special Handling and/or St	lorana		Type of Container	G	G1P/	MAID,			· · · · · · · · · · · · · · · · · · ·				1
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	SAMPLE ANAL	YSIS		Sel Hem () Specia Instructor	500 juri 12) specia infancti	7							
Sample No.	Matrix*	Sample Date	Sample Time										
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A-6003-618 (03/03)

FLUOR Hanford Inc.	CENTR	AL PLATEAU C	CHAIN OF	CUSTOD	Y/SAMPLI	E ANALYS	SIS REQU	EST	F(3-025-006	5-006 Page 1 o	
Collector PADRAGO HORAS	Company C TRENT,	Contact STEVE	Telephot 373-5			Pro TRI	ject Coordi ENT, SJ	nator	Price Code 8N		Data Turnaro 45 Day	
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling I 216-B-5	Location 8 (35 - 37.5 ft)		. :	· .		F No. -025		Air Quali	ty 🗀	45	Da
Ice Chest No. 6 3 - 0 1	Field Logb Hルド	000k No.		COA 119143ES	10	Me F	thod of Ship EDERAL E	ment XPRESS				
Shipped To TYYS 10-29-03 EBERLINE SERVICES (Formerly TMA)	Offsite Pro					Bil	l of Lading	Air Bill P	No.			
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	None								
Had tuto BITRWO	Т	ype of Container	G	G/P								L
Special Handling and/or Storage	N	o, of Container(s)	!	1								
Secretary and the second		Volume	250mL	250mL								
SAMPLE ANALYSIS	. · · · · · · · · · · · · · · · · · · ·		See item (1) in Special Instructions.	Special :								
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Keyin Himos 1973 D-9-03 T	ved By/Stored In Ved By/Store	enlommur	ate/Time	1-03					f'	12/2	3	DS= DL= T=T WI=
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A-6003-618(03/03)
Fel & 12-18-03 1040 Vield Hand 12-18/03 1040

FLUOR Hanford Inc. CENTRAL PLATEAU CHAIN OF CUST						Y/SAM	PLE ANA	ALYS	IS REQU	EST	F03	3-025-002	Page <u>1</u>	of <u>l</u>
Collector POPE / Hughtes	1 Pfister	Compan TREN	y Contact IT, STEVE	Telepho	ne No. 689				ect Coordi NT, SJ	nator P	rice Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterizat	tion - Soil	Samplin 216-E	T, STEVE Ig Location (F) (12.5) 3-58 (12.5-15 II)	1-13	54	•		SAF F03-		A	ir Quality		45	Days
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POSSIBLE SAMPLE HAZAF			Preservation	Cool 4C	None	Λ								
RADIOACT Special Handling and/or St		-	Type of Container	G	G/P									
		-	No. of Container(s)	250mL	250nL							<u> </u>		
			Volume	See item (1) i	n Sec item (2)	in i							<u> </u>	<u> </u>
	SAMPLE ANAL	YSIS		Special Instructions	Special									
Sample No.	Matrix *	Sample Date	Sample Time			M (Display		7		1353		700 500		
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CHAIN OF POSSESSION		Sign/Print l	Names	<u> </u>	SPE	CIAL IN	STRUCTI	ONS			<u> </u>			Matrix *
Relinquished By/Removed From	Pate/Time 12-6-	Received By/Stores Mooab F	ridge#2 1	ate/Time	SOO The	laboratory ge organics	is to analyze from the WT	pH with PH-D a	nalysis, See	SAF COC Co	ipt. The labor munents for ho ; Oil & Grease	atory is to report Iding time issue	rt kerosene es.	S=Soil SE=Sediment SO=Solid SI=Sludge
Relinquished By/Removed From No -0 26 Fridge 7 Relinquished By/Removed From	2 12/8/03 Date/Time /24/	Grec Thom	as Sug thom	1	42 (2)	Nickel-63:	Gamma Spec	- Radi	um (Radium- on-14; Stront	226, Radium- ium 89,90	228) : Technet Fotal Sr	ium-99; Isotop i	c-Thorius n	W * Water O=Oil A*Air DS*Drum Solids
Selinquished By/Removed From SO ONLE A/LUL 12	Date/Time 12/8/03	Received By/Store		este/Time	2 45					45fm	- 14/28	103		DS-Drum Sougs DL-Drum Liquids T-Tissue WI=Wipe L-Liquid V=Vegetation
Helingushed B/Removed From	Date/Time	Received By/Store	d in D-18-03	ate/Time 104 ate/Time	'0	Personnel Relinquish Ref# <i>IP</i> A	not availab samples fi on /2 //	le to rom 37 2 / <u>0</u>	728 3					X=Other
Relinquished By/Removed From	Date/Time	Keccived Dylatole	ــــــــــــــــــــــــــــــــــــــ						·		<u> </u>	·	Date/Time	
LABORATORY Received By SECTION					itle								Date/Time	
FINAL SAMPLE Disposal Me DISPOSITION	thod						Disposed By	1.1					-au : IIII	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

Date: 12.18.03

Purchase Order / Project# / F03-025 SAF# SOW# / Release #:

LvLI Batch #:

03/26 402

Sample Custodian:

	NOTE: EX	PLAIN ALL	DISCREPANCIES	
1.	Samples Hand Delivered or Shipped	Carrier	Felle	Airbill# 7909 9575 7 8409 6234 5
2.	Custody seals on coolers or shipping container intact, signed and dated?	□Yes	□ No	□ No Seals Comments
3.	Outside of coolers or shipping containers are free from damage?	□¥és	□ No	
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	□Yes	. □ No	
5.	Samples received cooled or ambient?	Temp	5,5.5°C	Cooler # Erc-02 - 505
6.	Custody seals on sample containers intact, signed and dated?	□Yes	□ No ¹	□ No Seals
7.	coc signed and dated?	1 Yes	□ No	en en egyekke de en en egyekke de en
8.	Sample containers are intact?	·□XES	□ No	
9.	All samples on coc received? All samples received on coc?	☐ Yes	□ No	
10.	All sample label information matches coc?	☐ Yes	□ No	
11.	Samples properly preserved?	☐ Yes	□ No	
12.	Samples received within hold times? Short holds taken to wet lab?	E Yes	□ No	
13.	VOA, TOC, TOX free of headspace?	₽ Yes	□ No	□ N/A
14.	QC stickers placed on bottles designated by client?	☐ Yes	□ No	E N/A
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	Æ Yes	□ No	
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	□ Yes	□No	ロンNo Discrepancies



Lionville Laboratory, Inc. INORGANIC ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2470

LVL LOT # :0312L402 12/18/03 DATE RECEIVED: MTX PREP # COLLECTION EXTR/PREP CLIENT ID /ANALYSIS ANALYSIS LVL # B17RT3 03L%S195 12/06/03 12/18/03 12/19/03 % SOLIDS 001 B17RV8 12/08/03 12/19/03 - 12/22/03 % SOLIDS 002 03L%S196 S 002 REP S 03L%S196 12/08/03 12/19/03 12/22/03 % SOLIDS 12/08/03 12/31/03 12/31/03 S 03LVI089 CHROMIUM VI 002 S 12/08/03 12/29/03 12/31/03 002 03LN3074 NITRATE NITRITE S 03LOG059 12/08/03 12/31/03 01/02/04 OIL & GREASE BY GRAV 002 SULFIDE 002 S 03LSD061 12/08/03 12/22/03 12/23/03 B17RW1 12/19/03 % SOLIDS 003 S 03L%S195 12/09/03 12/18/03 003 S 03LVI089 12/09/03 12/31/03 12/31/03 CHROMIUM VI S 03LVI089 12/09/03 12/31/03 003 REP 12/31/03 CHROMIUM VI S 03LVI089 12/09/03 12/31/03 12/31/03. 003 MS CHROMIUM VI S 12/31/03 12/31/03 CHROMIUM VI 003 MSD 03FAI088 12/09/03 NITRATE NITRITE 003 S 03LN3074 12/09/03 12/29/03 12/31/03 NITRATE NITRITE 003 REP S 03LN3074 12/09/03 12/29/03 12/31/03 12/09/03 003 MS 12/29/03 12/31/03 NITRATE NITRITE S 03LN3074 12/09/03 12/31/03 01/02/04 OIL & GREASE BY GRAV 003 S 03LOG059 03LSD061 12/09/03 12/22/03 12/23/03 SULFIDE 003 B17RT0 12/19/03 % SOLIDS 004 S 03L%S195 12/06/03 12/18/03 004 S 03LVI089 _ 12/06/03 12/31/03 12/31/03 CHROMIUM VI NITRATE NITRITE 004 S 03LN3074 12/06/03 12/29/03 12/31/03 OIL & GREASE BY GRAV 004 S 03LOG059 12/06/03 12/31/03 01/02/04 S 12/31/03 01/02/04 OIL AND GREASE BY GR 004 REP 03LOG059 12/06/03 004 MS S 12/31/03 01/02/04 OIL AND GREASE BY GR 03LOG059 12/06/03 S 12/22/03 12/23/03 SULFIDE 004 03LSD061 12/06/03 SULFIDE 004 REP S 03LSD061 12/06/03 12/22/03 12/23/03 03LSD061 12/06/03 12/22/03 12/23/03 SULFIDE 004 MS

LAB QC:

Lionville Laboratory, Inc. INORGANIC ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2470

DATE RECEIVED: 12/18/03

LVL LOT # :0312L402

CLIENT ID /ANALYSIS	LVL #	MTX	PREP # (COLLECTION	EXTR/PREP	*. *.	ANALYSIS
CHROMIUM VI CHROMIUM VI CHROMIUM VI NITRATE NITRITE NITRATE NITRITE OIL & GREASE BY GRAV OIL AND GREASE BY GR OIL AND GREASE BY GR SULFIDE SULFIDE	MB1 BS MB1 BSD MB1 BS MB1 BS MB1 BS MB1 BS MB1 BSD MB1 BSD MB1 BSD	99999999999	03LVI089 03LVI089 03LVI089 03LN3074 03LN3074 03LOG059 03LOG059 03LOG059 03LSD061 03LSD061	N/A N/A N/A N/A N/A N/A N/A N/A	12/31/03 12/31/03 12/31/03 12/31/03 12/31/03 12/31/03 12/31/03 12/22/03 12/22/03		12/31/03 12/31/03 12/31/03 12/31/03 01/02/04 01/02/04 01/02/04 12/23/03 12/23/03



Analytical Report

Client: TNU-HANFORD F03-025 H2470

W.O.#: 11343-606-001-9999-00

LVL#: 0312L402

Date Received: 12-18-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 4 soil samples.

- 2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.
- Sample holding times as required by the method and/or contract were met with the exception of 3. Sulfide that were received past hold.
- The results presented in this report are derived from samples that met LvLI's sample acceptance 4. policy with the exception of Sulfide as noted on the Sample Receipt Checklist.
- 5. The method blanks were within the method criteria.
- The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate 6. LCS for Oil and Grease was within the 20% Relative Percent Difference (RPD) control limit.
- The matrix spike recoveries for Chromium VI, Nitrate Nitrite, Oil and Grease and Sulfide were 7. within the 75-125% control limits.
- 8. The replicate analyses for Percent Solids, Chromium VI, Nitrate Nitrite, Oil and Grease and Sulfide were within the 20% RPD control limit.
- Results for solid samples are reported on a dry weight basis. 9.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

njp\i12-402

01-14-04 Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 17 pages.

Lionville Laboratory Incorporated WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	OTHER
			y partition of the second of t
% Ash	D2216-80		
% Moisture	D2216-80		ILMO4.0 (e)
% Solids			ILMO4.0 (e)
% Volatile Solids	D2216-80		
ASTM Extraction in Water	D3987-81/85		
BTU	D240-87		
CEC		9081	c
Chromium VI		3060A/7196A	
Corrosivity by coupon by pH		1110(mod) 9045C	
Cyanide, Total	en en en er er en	9010B	ILMO4.0 (e)
Cyanide, Reactive		Section 7.3/9014	
Halides, Extractable Organic		9020B	EPA 600/4/84-008
Halides, Total		9020B	EPA 600/4/84-008
EP Toxicity		1310A	
Flash Point	•	1010	
Ignitability		,1010	
Oil & Grease		√ 9071A	√ 413.1 (mod.)
Carbon, Total Organic		9060	Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	D240-87(mod)	5050	
Petroleum Hydrocarbons, Total Rec	overable	9071	EPA 418.1
pH, Soil		9045C	
Sulfide, Reactive		Section 7.3/9030B	
Sulfide		9030B(mod)	
Specific Gravity	D1429-76C/	_ D5057-90	
Sulfur, Total	·	9056	
Synthetic Preparation Leach		1312	
Paint Filter	+	9095A	
Other: Atrate Mitrite	Method: E	PA 353.2 (mad.)	
Other:	Method		

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

- 1. ASTM Standard Methods.
- USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

INORGANICS DATA SUMMARY REPORT 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0312L402

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
======			======	======	=========	========
-001	B17RT3	% Solids	97.5	8	0.01	1.0
-002	B17RV8	% Solids	95.8	%	0.01	1.0
		Chromium VI	0.21 u	MG/KG	0.21	1.0
		Nitrate Nitrite	1.3	MG/KG	0.20	1.0
		Oil & Grease Gravimetri	696 u	MG/KG	696	1.0
		Sulfide	20.4 u	MG/KG	20.4	1.0
-003	B17RW1	% Solids	95.5	ુ	0.01	1.0
	•	Chromium VI	0.21 u	MG/KG	0.21	1.0
2.3		Nitrate Nitrite	3.2	MG/KG	0.20	1.0
•		Oil & Grease Gravimetri	ั 698 - น	MG/KG	698	, ,1.0
		Sulfide	21.3 u	MG/KG	21.3	1.0
-004	B17RTO	% Solids	94.0	÷	0.01	1.0
		Chromium VI	0.21 u	MG/KG	0.21	1.0
		Nitrate Nitrite	1.1	mg/kg	0.21	1.0
* +	•	Oil & Grease Gravimetri	709 u	mg/kg	709	1.0
	4	Sulfide	21.9 u	MG/KG	21.9	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470

LVL LOT #: 0312L402

WORK ORDER: 11343-606-001-9999-00

	* **				REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
	=======================================	=======================================	=======	======		
BLANK10	03LVI089-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
				,		•
BLANK10	03LN3074-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
	•					
BLANK10	03LOG059-MB1	Oil & Grease Gravimetri	667 u	MG/KG	667	1.0
•			•			
BLANK10	03LSD061-MB1	Sulfide	40.0 u	MG/KG	40.0	1.0

INORGANICS ACCURACY REPORT 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470

LVL LOT #: 0312L402

MORK	ORDER:	11343-606-001-9999-00

		*	SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	%RECOV	FACTOR (SPK)
=======			======	. ======		====== .	
-003	B17RW1	Soluble Chromium VI	4.2	0.21u	4.2	95.3	1.0
		Insoluble Chromium VI	1070	0.21u	1020	105.0	100
•		Nitrate Nitrite	16.6	3.2	12.7	105.8	2.0
-004	B17RTO	Oil & Grease Gravimetr	5570	. 709 u	5910	94.2	1.0
•		Sulfide	161	12.6	194	76.6	1.0
BLANK10	03LVI089-MB1	Soluble Chromium VI	3.8	0.20u	4.0	95.3	1.0
		Insoluble Chromium VI	1170	0.20u	1180	99.1	100
BLANK10	03LN3074-MB1	Nitrate Nitrite	5.2	0.200	5.0	103.2	1.0
BLANK10	03LOG059~MB1	Oil & Grease Gravimetr	5400	667 u	5560	97.1	1.0
		Oil & Grease - Grav M	5300	667 u	5560	95.0	1.0
BLANK10	03LSD061-MB1	Sulfide	339	40.0 u	379	89.4	1.0
		· · · · · · · · · · · · · · · · · · ·					

INORGANICS DUPLICATE SPIKE REPORT 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470

LVL LOT #: 0312L402

WORK ORDER: 11343-606-001-9999-00

SPIKE#1 SPIKE#2

SAMPLE	SITE ID	ANALYTE	%RECOV	%RECOV	%DIFF
======	#=####################################		======	=====	
BLANK10	03LOG059-MB1	Oil & Grease - Grav	97.1	95.0	2.2

INORGANICS PRECISION REPORT 01/06/04

CLIENT: TNU-HANFORD F03-025 H2470 LVL LOT #: 0312L402

WORK ORDER: 11343-606-001-9999-00

. *			INITIAL				DILUTION
SAMPLE SITE ID		ANALYTE	RESULT	REPLICATE	RPD		FACTOR (REP)
======	=======================================		=======	========		-	========
-002REP	B17RV8	% Solids	95.8	95.8	0.00	. ,	1.0
-003REP	B17RW1	Chromium VI	0.21u	0.21u	NC		1.0
		Nitrate Nitrite	3.2	3.4	6.5		1.0
-004REP	B17RTO	Oil & Grease Gravimetri	709 u	709 u	NC .		1.0
		Sulfide	21.9 u	21.7 u	NC		1.0

Lionvilla	Laboratory	Lieo Only
CIOUVINE	Laboratory	OSC OTHY

Custody Transfer Record/Lab Work Request Page 1 of /

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03/26 402

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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Project Designation 200-LW-1/LW-2 Characteriz	ation - Soil	Sampli 216-	ng Location B-58 (17.5 - 20 ft)		134		•	SAF No. F03-025		Air Qua	lity []	45	Days
Ice Chest No.	02 505	Field L	ogbook No. JUF-10-33	0-1	COA 119143ES	10		Method o	of Shipment RAL EXPRES	s		· .	
Shipped To EBERLINE SERVICES (For		**	,	A040	06	4		Bill of L	nding/Air Bill	No.	PC		
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Prescrvation	Cool 4C	Coal 4C								
Special Handling and/or S			Type of Container	205* 2051212	85 aG 1								
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	SAMPLE ANAL	.YSIS		VOA - 8260A (TCL)	See item (1) in Special Instructions,								
Sample No.	Matrix *	Sample Date	Sample Time										
B17RT3	SOIL	12-6-03	1545	X	X								
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Collector PDC PhStes Highe	Company Contact 5	Telephone-No.	3-5689	Project Coordinator	Price Code	Data Turnaround
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Kad TIETO BITRUS Special Handling and/or Storage	Type of Container	G GIF	mars,			
	No. of Container(s)	250ML 2504	ार्थाम्बर			
	Volume	1. 1				
SAMPLE ANALYSIS		Sel Hem 500 re (1) Special (2) Spe instruction instru	m Wai chus			
Sample No. Matrix* Sar	mple Date Sample Time					
BNRV8 5011 12-	8-03 0840	X				
		<u> </u>				
						1
CHAIN OF POSSESSION	Sign/Print Names		SPECIAL INSTRUCT			Matrix *
Reliacuished Bylligmoved From Date/Time Re-	ceived By/Stored In	Date/Time	ハルコエ		6,1002/100 011 Grease-	W≂Water
Relinquished By/Removed From Date/Time Rec	ceived By/Storkd In E	/ひ <i>Lip</i> Date/Time	2283 Tech	7-99; Isolapi	ec-Badiun-zha e-Thorion-	AAAH AAAH ABBUM Ships DE Srum Liquids Tyfiskun LeLique
Relinquished By/Removed From Date/Time Rec	ceived By/Stored In C	Date/Time	51701011-2 51-89,90	323; Iritiom Total Sr	H3; Carbon-	V=Vegetation X=Other
Relinquished By/Removed From Date/Time Rec	ceived By/Stored In [Date/Time				
LABORATORY Received By SECTION		Tille		•	D	ate/Time
FINAL SAMPLE Disposal Method DISPOSITION			Disposed By		D	ate/Time

FLUOR Hanford Inc.		NTRAL PLATEAU Coany Contact			//SAMPLE A		IS REQUE	ator		3-025-006	Page 1	of 24
PIDEMON / HUMO	D TR	ENT, STEVE	Telephor 373-56	389 ···	,	TRI	NT, SJ	ator I	rice Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sam 21	oling Location 6-B-58 (35 - 37.5 ft)					No. -025	A	ir Quality	′ 🗆	45 Days	
6 Chest No.	Field H	Logbook No. UF - 356		COA 119143ES1	0	Mei F	hod of Shipi EDERAL EX	nent PRESS		· .		
Shipped To TYNS 10 - 29 - 03 Pos EBERLINE SERVICES (Formerly TMA)	Offsi	te Property No.				Bit	of Lading/A	ir Bill No).			
POSSIBLE SAMPLE HAZARDS/REMARKS HOLD BITKUC		Preservation	Cool 4C	None								
)	Type of Container	G	G/P								
Special Handling and/or Storage	1	No. of Container(s)	1	1		······································						
		Volume	250mL	250nL								
SAMPLE AN	ALYSIS		See item (1) in Special Instructions.	See item (2) in Special Instructions.								
Sample No. Matrix *	Sample Date	Sample Time			i							
B17RV8 SOIL	12-8-03	0840	1	/								
			ļ									
विदेशी है। इसे										<u> </u>		<u> </u>
	<u> </u>									<u> L</u>	<u> </u>	
telinquished By/Removed From Site Fride RMA 36B 12-9-3 telinquished By/Removed From Date/Time (A) The Description Date/Time (A) The Description Date/Time (A) The Description Date/Time (A) The Date/	Received By/St	ored in Dispersion of the Control in	ate/Time B 143 ate/Time	180 (i) Cl 2-7 (2) Mi	IAL INSTRUC boratory is to anal organics from the promium Hex - 71 okel-63; Guarante turn 292); Tritium	yze pH wit WTPH-D a 96; NO2/N	nalysis. See SA O3 - 353.2; Sul nn (Radium-2 :	AF COC Co fides - 9030	mments for hole; Oil & Grease	ding time issues	Thorium:	Matrix * S=Soil SE=Sediment SO-Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solid DL=Drum Liqu T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
teliphuished By/Removed From M-0200ate/Time	DIO Repeived By/Si	May MILL	2-11-03 3-11-03	3								X=Other
Selmonished By/Removed From Date/Time	7 2		~r ii 17. 7	1 '								1
LABORATORY Received By SECTION	3 Kur#	- 1110-UZG 10	Ti							E	Date/Time	

A-6003-618(03/03) Feed to (2-18-03 1040 Viels Head 12-18/03 1040

													Ċ
FLUOR Hanfor	d Inc.	CEN	NTRAL PLATEAU C	CHAIN OF	CUSTO)Y/SAMPL	E ANA	LYSIS REQUI	EST	F03	-025-002	Page 1	of 1
Collector POPE / HuGHE	3 / Pfister	TRE	any Contact ENT, STEVE	Telephon	89	-		Project Coordin TRENT, SJ	iator	Price Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characteriz	ation - Soil	Sampl 216	ing Location (12.5 - 15 11)	1-13.	5 C.J			SAF No. F03-025		Air Quality		45	Days
Ice Chest No. ORC O	1037	Field 1	Logbook No.		COA 119143E	S 10		Method of Ship FEDERAL EX		• .			
Shipped To EDERLINE SERVICES (For	MIZS/03 rmorly TMA) RECRA	Offsite	e Property No. RS	R 18	358	26		Bill of Lading/	Air Bill N	10. N/A			
POSSIBLE SAMPLE HAZA	•		Preservation	Cool 4C	None								
RADIOAC Special Handling and/or S			Type of Container	G	G/P								
	· · · · · · · · · · · · · · · · · · ·		No. of Container(s)	1	1/								
			Volunte	250mL	250nL								
	SAMPLE ANALYS	SIS		See item (1) in Special Instructions.	See itch (2) Special Instruction								
Sample No.	Matrix *	Sample Date	Sample Time		1 10 10 1					100000			
B17RT0	SOIL	12-6-3	3 /o: 3 0		/		ļ		· · · · · · · · · · · · · · · · · · ·				<u> </u>
									-				<u> </u>
- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1													
CHAIN OF POSSESSION	NN	Sign/Prin	4 Names	<u> </u>	lope	CVAT THEFT		2210			<u> </u>		Matrix *
Relinquished By/Removed From Relinquished By/Removed From No -0 Z6 Fridge Relinquished By/Removed From Relinquished By/Removed From	Pate/Time 12-6-3 /800 Pate/Time /2 30	Received By/Stor	red In Di	ate/Time 26-3/12 ate/Time 2/8/1 ate/Time	30 (1)	e organies fron Chromium Hex Nickel-63: Gar	o analyze p n the WTP c - 7196; N	JNS oH within 24 hours of PH-D analysis. See S IO2/NO3 - 353.2; Su - Radium (Radium-2 c; Carbon-14; Strontic	AF COC C lfides - 903 26, Radium nn 89,90	Comments for hole of the comments of the comme	ding time issue - 413.1 um-99, Isotopi	es.	S=Soil SE=Sediment SO=Solid SI=Sladge W = Water O=Oil A=Air
Circy Thomas Sucos Relinquished By/Removed From 50 GALE A/July 13	Dater I line	FED	red in D		<u>. 45</u>	nal nat	availabl	e to	7 SPW	- 10/28/	/ 03		DS=Dram Solid DL=Dram Liqui T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	· ·	Received By/Sto	A 12-18-03			ersonnel not Relinquish sa Ref#/A on							A-Gallo
LABORATORY Received B	y			Ti	le				X X.PV 17.			Date/Time	
FINAL SAMPLE Disposal M DISPOSITION	lethod					Dis	posed By			·	<u>ur</u>	Date/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

Purchase Order / Project# / F03-025
SAF#) SOW# / Release #:

Date: 12.18.03

	Batch #: 03/2C 402	S	ample Custo	odian: Vill Hand
	NOTE: EXI	PLAIN ALL D	ISCREPANC	ES
1.	Samples Hand Delivered or Shipped	Carrier F	E 3 C	Airbill# 7909 9575 7 8409 6234 57
2.	Custody seals on coolers or shipping container intact, signed and dated?	□ Yes	□ No	□ No Seals Comments
	Outside of coolers or shipping containers are free from damage?	□Yés	□ No	
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	□Yes	□ No	
5.	Samples received cooled or ambient?	Temp 5	5.5°C	Cooler # ERC-02 - 505
6.	Custody seals on sample containers intact, signed and dated?	□ Yes	□ No ¹	No Seals
7.	coc signed and dated?	TI Yes	□ No	
8.	Sample containers are intact?	· □ Xes	□ No	
9.	All samples on coc received? All samples received on coc?	G-Yes	□ No	
10.	All sample label information matches coc?	☐ Yes	□No	
11.	Samples properly preserved?	□ Yes	□ No,	
12.	Samples received within hold times? Short holds taken to wet lab?	Yes V.	d Divo G	rulfide rec'd partholo
13.	VOA, TOC, TOX free of headspace?	Yes	□ No	□ N/A
14.	QC stickers placed on bottles designated by client?	□ Yes	□ No	DNA
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	Fies , A	M No A	el #12
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	□ Yes	□No	Discrepancies

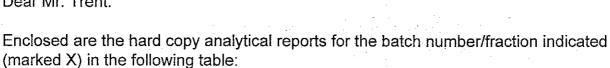


21 January 2004

Mr. Steve Trent Fluor Hanford Inc. 825 Jadwin Ave. Richland, WA 99352

Subject: Contract No. 630
Analytical Data Package

Dear Mr. Trent:



LvLl Batch #	0312L369
SDG#	H2461
SAF#	F03-025
Date Received	12-15-03
# Samples	7
Matrix	Soil
Volatiles	Χ
Semivolatiles	
Pest/PCB	. X
DRO/GRO/KRO	Χ
Herbicides	Χ
GC Alcohol	Χ
Metals	Χ
Inorganics	Χ

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lidaville Laboratory Incorporated

Orlette S. Johnson Project Manager

r:\group\pm\orlette\tnu-hanford\data\fc ltrs.doc

Lionville Laboratory, Inc. VOA ANALYTICAL DATA PACKAGE FOR TNU-HANFORD F03-025, H246(

DATE RECEIVED: 12/15/03 LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
	•					
B17RT8	004	ន	03LVX399	12/07/03	N/A	12/17/03
B17RT8	004 MS	ន	03LVX399	12/07/03	N/A	12/17/03
B17RT8	004 MSD	Š	03LVX399	12/07/03	N/A	12/17/03
LAB QC:						
					· ·	
VBLKRJ	MB1	S	03LVX399	N/A	N/A	12/17/03
VBLKRJ	MB1 BS	S.	03FAX333	N/A	N/A	12/17/03





Client: TNU-HANFORD F03-025

LVL#: 0312L369

SDG/SAF # H2461/F03-025

W.O. #: 11343-606-001-9999-00

Date Received: 12-15-2003

1/15/04 Date

GC/MS VOLATILE

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 12-17-2003.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The sample was analyzed within holding time.
- 3. Non-target compounds were not detected in the sample.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than the CRQL.
- 8. Internal standard area and retention time criteria were met.
- 9. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

V. Michael Taylo

President

Lionville Laboratory Incorporated

som/group/data/voa/tnu-hanford/0312-369.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of \$1.5\$ pages.

02

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- **D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- **NQ** = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closes internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

sb\10-03\gloss.doc



3

GLOSSARY

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, **Z** = Indicates Spiked Compound.

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TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: Manually added peak not found by automatic quan program.
- PA Peak Assignment: Quan report was changed to reflect correct peak assignment.
- RI Routine Integration: Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP Split Peak: The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Co-elution/ Background: Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI Proper Integration: A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

LVL-21-21-035/A-08/93



Report Date: 12/19/03 15:47 Volatiles by GC/MS, HSL List Report Date: 12
Client: TNU-HANFORD F03-025, # 246/ Work Order: 11343606001 Page: 1a RFW Batch Number: 0312L369

Cust ID:	B17RT8	B17RT8	B17RT8	VBLKRJ	VBLKRJ BS	
Sample RFW#: Information Matrix: D.F.: Units:	004 SOIL 1.09 ug/Kg	004 MS SOIL 0.980 ug/Kg	004 MSD SOIL 1.06 ug/Kg	03LVX399-MB1 SOIL 1.00 ug/Kg	03LVX399-MB1 SOIL 1.00 ug/Kg	
Toluene-d8 Surrogate Bromofluorobenzene Recovery 1,2-Dichloroethane-d4	96 % 94 % 94 %	95 % 92 % 97 %	93 % 90 % 92 %	96	95 % 94 % 94 %	
Chloromethane Bromomethane Vinyl Chloride Chloroethane Methylene Chloride Acetone Carbon Disulfide 1,1-Dichloroethene 1,2-Dichloroethene 1,2-Dichloroethene 2-Butanone 1,1,1-Trichloroethane 2-Butanone 1,1,1-Trichloroethane 1,2-Dichloromethane Carbon Tetrachloride Bromodichloromethane 1,2-Dichloropropane cis-1,3-Dichloropropene Trichloroethene Dibromochloromethane 1,1,2-Trichloroethane	11 U 11 U 11 U 11 U 17 B 11 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6		11 U 11 U 11 U 11 U 11 U 18 B 11 U 6 U 87 % 6 U 6 U 6 U 6 U 70 % 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U 6 U	10 U 10 U 10 U 10 U 10 U 10 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5 U 5	10 U	
Benzene Trans-1,3-Dichloropropene Bromoform 4-Methyl-2-pentanone 2-Hexanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Toluene *= Outside of EPA CLP QC limits.	6 U 6 U 6 U 11 U 11 U 6 U 6 U 6 U	93 % 5 U 10 U 10 U 5 U 5 U 93 %	88 % 6 U 6 U 11 U 11 U 6 U 6 U 90 %	5 U 5 U 5 U 10 U 10 U 5 U 5 U 5 U	88 % 5 U 5 U 10 U 10 U 5 U 5 U 90 %	

	Cust ID:	B17RT8	B17RT8	B17RT8	VBLKRJ	VBLKRJ BS	
	RFW#:	004	004 MS	004 MSD	03LVX399-MB1	03LVX399-MB1	
Chlorobenzene		6 U	92 %	88 %	5 U	87 %	
Ethylbenzene		6 U	5 U	្ទ័6 ប	5 U	5 U	
Styrene		6 U	5 U	6 U	5 U	5 U	
Xylene (total)		6 U	5 U	· 6 U	5 U	5 U	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1

Lionville Laboratory Use Only Custody Transfer Record/Lab Work Request Page ______/ of ____/ 03121369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS ABC Client TNU Have And P03-025 Refrigerator #. Llauld Est, Final Proj. Sampling Date_ #/Type Container Project # 10343 - 60 % - 001 - 9999-07 Solid BOOL AGL BAGG AGL Liquid Project Contact/Phone # ____ Volume Lionville Laboratory Project Manager O. Uohnson 40 250 500 -Solid 60 60 120 120 20 ac SPEC Del 5-0 TAT 30 days Preservatives ORGANIC ANALYSES Date Rec'd 12/15/03 REQUESTED 1-14-03 Lionville Laboratory Use Only Matrix MATRIX QC CODES: の下部のメ 0624H Lab ` Date Time Chosen Client ID/Description Matrix S - Soil Collected Collected SE - Sediment SO - Solid MS MSD SL - Sludge W - Water BITR45 12/5/03 1500 O - OII 12/6/03 1545 A-m. Air: B17R73 DS - Drum 1545 Solids BITRTO DL - Drum 12/7/03/1030 Llauids BITRTS L. EP/TOUP 1410 Leachate BITRUS WI - Wipe 12/10/03 1245 X - Other 006 BITRW4 Fish 2/7/03 (030) BITRVZ DATE/REVISIONS: Lionville Laboratory Use Only Special Instructions: SAF # F03 -025 Run Matrix Q c MET O: RCRA + Sb. Be. Bi, Cu. Ni Tamper Resistant Seal was: Samples were: 1) Shipped ---- or 1) Present on Outer Hand Delivered ____ Package Y or N Airbill # 2) Unbroken on Outer Package Y or N 2) Ambient or Chilled 10 0 : CI, F, NO, NOL, PO4. SOL 3) Present on Sample . Y or N 3) Received in Good Condition Y or N 4) Unbroken on 4) Samples Sample Y or N Properly Preserved COC Record Present Discrepancies Between Upon Sample Rec't Received Relinquished Time Samples Labels and Y or N

0950 12/5/13

Relinquished by	Received by	Date	Time
"COMPOSIT	ORIG	NAL	· .
WASTE	REWR	TTEN	

COC Record? Y or N

NOTES:

Cooler Temp. _____

in the second se	• •	•			2.5								<u>\\\</u>
FLUOR Hanford	Inc.	CEN	TRAL PLATEAU (CHAIN O	CUSTOD	Y/SAMPL	E ANA	LYSIS REQU	EST	F0	3-025-001	Page 1	of <u>1</u>
Collector POPE /PFIS	TER / Hughes	Compa TRE	ny Contact NT, STEVE	Telepho 373-5	ne No. 689			Project Coord TRENT, SJ	inator	Price Code 8N			rnaround
Project Designation 200-LW-1/LW-2 Characteriza		Sampli	ng Location B-58 (0.5 ft)		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			SAF No. F03-025	-	Air Qualit	у []	45	Days
Ice Chest No. ER C		Field L	ogbook No.		COA 119143ES	10		Method of Shi FEDERAL E	XPRESS				
Shipped To 1970 10-20-C EBERLINE SERVICES (For		Offsite	Property No.	A04	0 05	9		Bill of Lading	/Air Bill	No. SE.	E OSF	<u>' د</u>	
POSSIBLE SAMPLE HAZAI			Preservation	Cool 4C	Cool 4C								
			Type of Container	aG	aG								
Special Handling and/or St	orage		No. of Container(s)	ı	1.								
			Volume	60mL	60mL								
	SAMPLE ANALY	SIS		Pesticides - 8081	Chloro- Herbicides - EPA8151								
Sample No.	Matrix *	Sample Date	Sample Time									100	
B17RY5	SOIL .	12-5-3	15:00	سهب					7	ETO	B 17/	RY6	
					1 + 4				<u> </u>			'	
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3.1 1.2					1		<u> </u>				<u> </u>	<u> </u>	
Relinquished By/Removed From	Date/Time /6:00 12-5-3 12-5-3 12-6-63 Date/Time 1245 Date/Time 2-12-03 Date/Time 15-63 Date/Time 15-63 Date/Time 15-63	Received By/Stor Received By/Stor Received By/Stor Received By/Stor	ed in De Fridge #1 18 cornes Strugge #1 18 cornes Strugge #1 12 (2) and in Energy #1 (2) and	pate/Time Pate/Time Pate/Time Pate/Time Date/Time	230 8/03	sonnel not a slinquish san f#/f4 on/	ivailable	: to m 3728			ŗ	Date/Time	Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Dram Solids DL=Dram Liquid T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
SECTION						D:	and De		· · · · · · · · · · · · · · · · · · ·			Dota/Time	
FINAL SAMPLE Disposal Mo	TINAL SAMPLE Disposal Method						osed By			•	* 1	Date/Time	

A-6003-618(03/03)

FLUOR Hanfor	d Inc.	CE	NTRAL PLATEAU (CHAIN O	F CUSTO	Y/SAMP	LE ANA	LYSI	S REQU	JEST	F	03-025-003	3 Page 1 of 1	
Collector DDC DF	Ster Hughe	S Comp	any Contact ENT, STEVE	Telepho 373-:	one No. 5689			Proje TREN	et Coordi IT, SJ	inator	Price Code	8N		urnaround
Project Designation 200-LW-1/LW-2 Characteriz	ation - Soil		ling Location 5-B-58 (17.5 - 20 ft)			- - -		SAF 1 F03-0	No. 25		Air Quali	ity 📋	45	Days
Ice Chest No. ER & C	02-501	Field	Logbook No.		COA 119143ES	310			od of Ship DERAL E		3			
Shipped To TWO 10-2	gineny rima, Recra	Offsit	e Property No. A	340	059			Bill o	f Lading/	'Air Bill	No. Su	E OS	ک د	
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	Cool 4C	None									
, v			Type of Container	G	G/P									
Special Handling and/or S	Storage		No. of Container(s)	1	1/		-		 					
A Company			Volume	250mL	250mL									
Series (Security Control of Contr	SAMPLE ANAI	.YSIS		See item (1) in Special Instructions.	See iter (2) in Special Instructions.									
		:		140000000000000000000000000000000000000	10/00			Service The						
Sample No. B17RT3	Matrix * SOIL	Sample Date	Sample Time	FAT (A)	17		le de la constante de la const		Section 18			e Calendaria	9 /2	2 5
B17RT6	SOIL	12-6-5	3 <i>15:45</i> 3 <i>15:45</i>		1	<u> </u>				ļ <u>.</u>	77.6		317	215
			3 /3 · 13		 		-			<u> </u>		C 70	3170	4/5
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		·········				 								
CHAIN OF POSSESSIO	· · · · · · · · · · · · · · · · · · ·	Sign/Prin			SPEC	CIAL INST	RUCTIO	NS						Matrix *
Relinquished By/Removed From		200 026 F		te/Time 5-3 /8	The la	aboratory is to organics fron	analyze pi n the WTPI	H within H-D analy	24 hours of ysis. See S	sample re AF COC (eceipt. The labo Comments for h	ratory is to repor olding time issue:	t kerosene s.	S=Soil SE=Sediment
Relinquished By/Removed From #	Date/Time 1230	Received By/Stor	ed In Da	te/Time /7	(1) C	hromium Hex	c - 7196; N	O2/NO3	- 353.2; Su (Radius 2	lfides - 90	30; Oil & Greas	ie - 413.1 Hidur 99; Isotopia	Thomas	SO=Solid SI=Sindge W = Water
Relinquished By/Removed From	Date/Time /24	Received By/Stor		te/Time 103 12	ione)	ium-232), Tr	idum- 113;	Carbon-	14; Strontic	mr-69,90	On Sr	0 12/2/3		O=Oil A=Air DS=Droin Sol
telinguished By/Reinoved From	Date/Time 2 12 03 1000	Received By/Stor		te/Time		9 .		•					•	DL=Drum Liq T=Tissue WI=Wipe
telinquished By/Removed From	Date/Time 5 (03 04550	Received By/Stor		te/Time	l F	ersonnet no Velinguish si	amples fro	om 3728	}					L=Liquid V=Vegennion X=Other
telinquished By/Removed From	Date/Time	Received By/Stor	ed A Da	te/Time	R	ef# <u>//t</u> on	116/16	-/-03						
LABORATORY Received By SECTION				Tit	le see	:							ate/Time	<u> </u>
FINAL SAMPLE Disposal Mc DISPOSITION	thod	*				Disp	osed By					I	Date/Time	·
\-6003-618(03/03)	······································			······································	. 147						·	<u></u>	<u> </u>	
2-avina-a i o(na)na)			(1) (1) (1) (3)				÷ ,							

FLUOR Hanford Inc.	CEN	ITRAL PLATEAU C	CHAIN OF	CUSTOD	Y/SAMPLE	E ANA	LYSIS REQU	EST	F03-025-004 Pag		Page 1	Page <u>l</u> of <u>l</u>	
lector 4DP PhSter 14 Mhs	Compa TRE	ny Contact NT, STEVE	Telephor 373-56				Project Coordi TRENT, SJ	nator	Price Code	8N		ırnaround	
oject Designation 100-LW-1/LW-2 Characterization - Soil	Sampli	ing Location B-58 (22.5 - 25 ft)					SAF No. F03-025		Air Quality	/ []	45	Days	
Chest No. RRC 02 501	HA	ogbook No. UF - N- 3510-1		COA 119143ES	10		Method of Ship FEDERAL E						
pped To TYYS 10-78-03 EBERLING SERVICES (Formerly TMA) PLC/a	Offsite	Property No. AOY	0 05	9			Bill of Lading/	Air Bill i	No. 5 €€	780			
DSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4	C None	None	None				
		Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	. G/P				
oecial Handling and/or Storage		No. of Container(s)	3	1	. 3	ı	1	I	1				
		Volume	40mL	120mL	40mL	120m	L 250mL	500mI	. 500mL				
SAMPLE ANALYSIS	3		VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 { I-Butanol, Ethylene	PCBs - 8	O82 See item (2) in Special Instructions.	See item (3 Special Instructio	Special				
	·				glycol)				\$ \lambda \lam				
9,00,00	Sample Date	Sample Time							<u> </u>				
7RT8 SOIL /¿	2-7-3	3 10:30	سئر.						/	7167	0 B17	<u>RV</u>	
												 	
						re	rsonnel not avail linquişh samples	from 37:				 	
						Re	f# <u>j#</u> on <u>rz/</u>	<u>/ 2 / 0′</u>	<u> </u>				
CHAIN OF POSSESSION	Sign/Print				IAL INSTRU		NS I within 24 hours of	'cannia ra	egipt. The labora	laine in ta connet	karagana	Matrix	
nquished By/Removed From Date/Time 1600 Re			te/Time 16 2-7-3	range	organics from the	he WTPH	I-D analysis. See S	AF COC (Comments for hole	ding time issues	Kerosene	S≃Soil SE≃Sedim	
equished By/Removed From Date/Time 1230 Re	eceived By/Store	ed In Sansymuter	te/Time	(1) So Diesel) {Phenol}; Semi-V al petroleum hydroc					SO≃Sotid SI=Sludge W = Wate	
	eccive By/Store	- Da	te/Time	kerose (2) IC	one range); TPH P Metals - 6010	I-Gasolin 0A (Supe	e Range - WTPH-G rtrace) (Arsenic, Ba	i arium, Cad	lmium, Chromium	, Lead, Seleniu	n, Silver};	O≏Oil A≖Air	
HOULD BIND DUILDING	<u> 104.</u>	# 6 199	03 143 te/Time	() ICP M 7471 -	letais - 6010A (Supertrac	e Add-On) {Antim	ony, Beryl	lium, Bismuth, Co	opper, Nickel};	Mercury -	DS=Drum DL=Drum T=Tissuc	
	eceived By/Store		116	人之 上(3) 10			de, Fluoride, Nitrate 45	, Nitrite, I	hosphate, Sulfate	}; Ammonia - 3	50.3; Total	Wl≖Wipe L≠Liquid	
	ceived By/Store		te/Time 11/13/01	(4)	an apace - Atau-o	n pani	onani iron Poolanii Ongaloo Poolanii	Of Burepas Of States	- Pineria		American-	V≖Vegeta X≖Other	
iquished By/Removed From Date/Time R	eccived By/Store	od in Da	te/Time	400	openintitiezbie,	ronn-oi	RP	12/	12/3				
BORATORY Received By SECTION Received By: Fred Ex	13/15/1	13 0950 R	ec by	e IPEN	n1					D	ate/Time	<u> </u>	
			/	<u> </u>	Dispos	ed By	·····				Date/Time		
NAL SAMPLE Disposal Method ISPOSITION					U				· ·	· · · · · · ·			

FLUOR Hanford Inc.	CEN	TRAL PLATEAU C	HAIN OF	CUSTOD	Y/SAMPLE A			,		F03	-025-005	Page 1	of <u>I</u>
Collector LODE PHENT HUMES	Compa TRE	ny Contact NT, STEVE	Telephor 373-56	ne No. 589			Project Coo FRENT, SJ	rdinator	Price Code 8N		8N	Data Tu	4.00
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampli 216-	ng Location B-58 (27.5 - 30 ft)			:		SAF No. F03-025		'Ai	r Quality	· [_]	45	Day
Ice Chest No. ERC 02501	Field L	ogbook No.		COA 119143ES	10		Method of S FEDERA	LEXPRES					
Shipped To 47775 10-29-03 Recra	Offsite	Property No.	2040	059	9		Bill of Ladi	ng/Air Bii	il No.	SEE	057	<u>_</u>	
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	None									
Special Handling and/or Storage		Type of Container	G	G/P									
		No. of Container(s)	l	1									
<u> Karalan da kabupaten da kabup</u>		. Volume .	250mL	250 nL		•							
SAMPLE ANALYSIS			See item (1) in Special Instructions.	See item (2) in Special Instructions.									
				1/2/2/21					· :				
	nple Date	Sample Time		1				# # # W				100	
B17RV5 SOIL 12	<u>-7-1</u>	3 14:10	_X	 				77	13	70	B17	RVZ	-
													+-
				<u> </u>	 						 		+-
				1			·						
			: -			<u> </u>	l	1					
CHAIN OF POSSESSION	Sign/Print				CIAL INSTRUC			ure of comple	raccio	st. The Johorn	tour le te veneu	4 1	Mat
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time /6:40 Rece	ived By/Store	ed In Da	ate/Time 2-3//6:	The la	CIAL INSTRUC aboratory is to analy organics from the V	yze pH	within 24 hot						S=Soil SE=So
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time /6:40 Rece CUANUGUES TO Date/Time /2:40 Rece Relinquished By/Removed From Date/Time /2:30 Rece	ived By/Store OPS Front ived By/Store	ed in Da 18ge #1 12-7 ed in 1 Da	13/162 ite/Time	40 The la range (1) C	aboratory is to analy organics from the V Chromium Hex - 719	yze pH WTPH 96; NC	within 24 hou -D analysis. S 2/NO3 - 353.	see SAF CO 2, Sulfides -	C Com	unents for hole Oil & Grease	ding time issues - 413.1	s.	S=Soil SE=So SO*So Sh=Sh
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time /6:40 Rece CUAN WORKS TO DATE/Time 1230 Rece MOSC Ref #1 12/8/03 Relinquished By/Removed From Date/Time /245 Relinquished By/Removed From Date/Time /245 Rece Grey Homes 12/8/03	ived By/Store 1096 From 1096 From 1096 By/Store 1096 By/Store	ed In Da	7-3/16; ate/Time / 1 ate/Time	The larange (1) C (2) A (Thou	aboratory is to analy organics from the V	yze pH WTPH 96; NC	within 24 hot -D analysis. S 2/NO3 - 353 Radium (Radi	see SAF CO 2; Sulfides - um-226; Rac	C Com 9030; dian-2	unents for hole Oil & Grease 28), Techneti	ding time issues - 413.1 um 99: Isotopic	s. c Thorium	S=Soil SE=So SO * So Si=Stu W = W O=Oil A=Air DS=D DL=D
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time /6:40 Rece CVAN WORKS TO DATE/Time 1230 Rece MOST Ref #1 12/8/03 Relinquished By/Removed From Date/Time /245 Rece Grey Homes 12/8/03 Relinquished By/Removed From Date/Time Rece	ived By/Stord OPG From ived By/Stord COG The	ed In Da	ate/Time	70 The la range (1) C (2) A (2) A (2) C (2) C (2) A (2) C (2) A (2) C (2) C (2) C (2) A (2) C (2	aboratory is to analy organics from the V Chromium Hex - 719 lickel 63, Gamina S cium 232), Tritian	yze pH WTPH 96; NC Spec - - H3; 0	within 24 hot -D analysis, 5 2/NO3 - 353, Radium (Radi Carbon-14; Sti	see SAF CO 2; Sulfides - um-226; Rac	C Com 9030; dian-2	unents for hole Oil & Grease 28), Techneti	ding time issues - 413.1	s. c Thorium	S=Soil SE=So SO*Sc Si=Str W = W O=Oil A=Air DS=D DL=D T=Tis Wi=W L=Liq
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time 1230 Relinquished By/Removed From Date/Time 1230 Relinquished By/Removed From Date/Time 1245 Relinquished By/Removed From Date/Time 1245 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0930 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0930 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0930 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0950	ived By/Store 1026 F/ gived By/Store ived By/Store Sived By/Store ED E- cived By/Store CD E- cived By/Store CD E- cived By/Store	ed In Da	7-3/16; ate/Time / 1 ate/Time	The la range (2) (1) C (2) A (aboratory is to analy organics from the Victorium Hex - 719 liekel-63; Gamma Strium 232); Trition organical not available of sample	yze pH WTPH 96; NC Spec - - H3; (within 24 hor-D analysis. \$12/NO3 - 353 Radillum (Radillum (Rad	see SAF CO 2; Sulfides - um-226; Rac	C Com 9030; dian-2	unents for hole Oil & Grease 28), Techneti	ding time issues - 413.1 um 99: Isotopic	s. c Thorium	S=Soil SE=So SO+So St=St: W = W O=Oil A=Atr DS=D DL=D T=Tis W!= L=Liq V=Ve
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time 1230 Relinquished By/Removed From Date/Time 1230 Relinquished By/Removed From Date/Time 1245 Relinquished By/Removed From Date/Time 1245 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0930 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0930 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0930 Relinquished By/Removed From Date/Time Rece Dictal Editable 12-12-03 0950	ived By/Store 1 0 2 6 F1 ived By/Store ived By/Store ived By/Store ived By/Store ived By/Store	ed In Da	ate/Time	The la range (2) (1) C (2) A (aboratory is to analy organics from the Victorium Hex - 719 linkel-63, Gamma Strium 232), Trition	yze pH WTPH 96; NC Spec - - H3; (within 24 hor-D analysis. \$12/NO3 - 353 Radillum (Radillum (Rad	see SAF CO 2; Sulfides - um-226; Rac	C Com 9030; dian-2	unents for hole Oil & Grease 28), Techneti	ding time issues - 413.1 um 99: Isotopic	s. c Thorium	S=Soi SE=So SO+S Si=Sh W = V O=Oil A=Ah DS=D DL=D T=Ti=V V=Ve V=Ve
CHAIN OF POSSESSION Relinquished By/Removed From Date/Time /2:40 Rece CXA MOSSESSION Relinquished By/Removed From Date/Time /2:30 Rece Grey Tromas Mary Language Prom Date/Time /2:45 Relinquished By/Removed From Date/Time Rece Signal Salaguage Prom Date/Time Rece Control Salaguage Prom Date/Time Prom Date	ived By/Store 1026 F/ gived By/Store ived By/Store Sived By/Store ED E- cived By/Store CD E- cived By/Store CD E- cived By/Store	ed In Da	ate/Time	70 The la range (2) C (2) L (2	aboratory is to analy organics from the Victorium Hex - 719 liekel-63; Gamma Strium 232); Trition organical not available of sample	yze pH WTPH 96; NC Spec - - H3; (within 24 hor-D analysis. \$12/NO3 - 353 Radillum (Radillum (Rad	see SAF CO 2; Sulfides - um-226; Rac	C Com 9030; dian-2	unents for hole Oil & Grease 28), Techneti	ding time issues - 413.1 um 99; Isotopic P 12/2 (s. c Thorium	Mat S=Soil SE=SC SO=Sc SI=Sti W = W O=Oit A=Air DS=D DL=Tis: Wi=W L=Liq V=Ve; X=Oit

FLUOR H							CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUES							F03-025-008 Page 1			
Collector HDD	HOLES IX	hisp	UCOMPANY C TRENT, S	ontact STEVE	Telepho 373-5						ect Coordi NT, SJ	nator i	Price Code	8N		naround 🦳	
Project Designation 200-LW-1/LW-2 Chara	cterization - Soil		Sampling Lo 216-B-58	ocation (97.5 -100 ft)	<u> </u>					SAF F03-		Α	ir Quality		45.	Days	
Ice Chest No. 372 C	02 501	•	Field Logho	3561		CO.	4 43ES1	0		FE	od of Ship EDERAL E	XPRESS					
Shipped To MYSERVICE	5 10-19-03 VQ	ra	Offsite Prop	perty No. A	040	0	59			Bill	of Lading/	Air Bill No	° 50°25	037	<u> </u>		
POSSIBLE SAMPLE I	iazards/remarks																
	•			Preservation	Cool 4C	- No	one /										
Special Handling and	/or Storage		Ту	pe of Container	G ·	G	/P										
	,		No.	. of Container(s)	. 1		1										
	+1, · · ·			Volume	250mL	250)inL							·	· · · · · · · · · · · · · · · · · · ·		
	SAMPLE A	NALYSIS	· · · · · · · · · · · · · · · · · · ·		See item (1) ir Special Instructions,	Spg	(2) in cial ctions.										
, and the second se						8	N										
Sample No.	Matrix *	Sam	ple Date	Sample Time							ANYE						
B17RW4	SOIL	12-10	2-03	1245	X	7		1 **					TIE	70 B	17RU	6	
) in [<u> </u>		<u>:</u>					,					
						:											
					<u> </u>						· · · · · · · · · · · · · · · · · · ·			·			
CHAIN OF POSSI			ign/Print Nam					TAL INSTR			in 24 hours o	fermula rea	eipt. The Inbora		. 1	Matrix *	
Relinquished By Removed From 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MMMN Date/Time	1515 Receiv	ed By/Stored In	1 mo 026 6	<u> 10100</u>	715	range	organics from (the WTP	'H-D an	nalysis. See S	SAF COC Co	omments for holo	ling time issues	kerosene 5.	S=Soil SE=Sediment	
Belinquiched By/Removed Fro	Date/Time	000 Pin	ed By/Stored In	MM MAG		13	(2)_N	ickel-61 Game	на Эрсс	- Radio	mr (Radium-	226, Radium), Oil & Grease -228), Technetic	- 413.l .m-99; Isotop ic	-Thorium	SO=Solid SI=Sludge W = Water	
Belinquished By/Removed Fro	Date/Time	1010 Receiv	ed By/Stored In			010	(Tho	ium-232); Trit	<u> </u>	, Carbe	m-14; Stronti	wn 89,90	Rotal Sr.	P 12/2	/3	O=Oil A=Air DS=Drum Solids	
Relinquished By/Removed Fro	Date/Time	Receiv	ed By/Stored In) a D	ate/Time		÷						1.	' (OL=Dream Liquids T=Tissue Wt=Wipe	
KEF 3 B 37 L				He 121203		2	P	ersonner not telinquish sar	avanab unles fr	ie to rom 37	7 28					L=Liquid V=Vegetation	
Relinquished By/Removed Fro	121203 11	00 1	ed By/Stored In	<u> </u>	ate/Time		R	ef# <u>36</u> on_	12/17	<i>ا</i> ا	3					X=Other	
Relinguished By/Removed Fro	12/15/03 00	150 Receiv	ed By Stored In	<i>t</i>	ate/Time		_		19.3								
LABORATORY Rece SECTION	ived By				T	itle								Ĺ	Date/Time		
FINAL SAMPLE Disp	osal Method							Dispo	sed By					ı	Date/Time	-	
<u> </u>			· · · · · · · · · · · · · · · · · · ·														

FLUOR Hanford Inc		CEN	NTRAL PLATEAU C	HAIN O	CUST	ODY	//SAMPL	E ANA	LYSI	S REQU	EST	F03-	-025-044	Page 1	of <u>I</u>
Collector HDC/PHS	o Ha	Compa	nny Contact NT, STEVE	Telepho 373-5		:				et Coordi NT, SJ	nator P	rice Code	8N	Data Tur	< T
Project Designation 200-LW-1/LW-2 Characterization -	Soil		ing Location -B-58 (22.5 - 25 ft)					-	SAF F03-0		A	ir Quality		45.1	Days
Ice Chest No. ER C 02	501	Field I	Logbook No. HNF·N-35Le-	}	COA 11914	13ES1	0			od of Ship DERAL E					
Shipped To TYV510-12-0	Amas Recr.		Property No.	040	05	59			Bill	of Lading/	Air Bill No ふらび	0370	*		MANNAL IA AUMILUM TEP 112
POSSIBLE SAMPLE HAZARDS/	REMARKS		Preservation	Cool 4C	Noi	ne									t.
Special Handling and/or Stora	⊵e		Type of Container	G	G/	P									
	•		No. of Container(s)	1	1			ļ							
	· · · · · · · · · · · · · · · · · · ·		Volume	250mL	250										·
	SAMPLE ANAL	YSIS		See item (1) i Special Instructions.	See item Spec Instru	lial .									
Sample No.	Matrix *	Sample Date	Sample Time											g may plant	
B17RV2	SOIL	12-7-	3 10:30	X				<u> </u>			ļ	1/4=	700 3	12RL	//
					-			 		<u></u>	<u> </u>				
6															
										· · · · · · · · · · · · · · · · · · ·					
CHAIN OF POSSESSION Relinquished By/Removed From Relinquished By/Removed From SHe Trailer HMA From Rethanvished By/Removed From	Date Time 1930 2 19-9-03 Date Time	Received By/Stor	red In Di Per RmA Fridge red In Di red In MO-026 Di H) 9-0	ate/Time 1, ate/Time 03/4	330 3403 3403	The la range (1) C. (2) N	organics from iromium Hex	analyze r the WTF - 7196; N	H with H-D an O2/NC	alysis. See 3 03 - 353.2; Si in {Radium.	SAF COC Co ulfides - 9030 226, Radium	ipt. The laboral mments for hold ; Oil & Grease 228); Technotic foral Sr	ling time issue: - 413.1	S	Matrix * S=Sail SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From 26	Date/Time 100 Date/Time 101	Received By/Sto	43728	180411 2-11-0	1000	Re	sonnel not	noles fro	m 372	8					W1=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	Date/Time		red In 2,203 1/0	ate/Time		Ref	# <u>11 on 1</u>	2/12	/ e)						
LABORATORY Received By,	: FedEX		3 0950 Re	c.by	itle	evi	res						ī	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION								osed By			:			Date/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: 7NU- HANFORD

Purchase Order / Project# /
SAF# / SOW# / Release #: F03-025

LvLI Batch #:

03/21/369

Date: /2-15-03

Sample Custodian: //

		03/22369		* * *	U-Hend	
		NOTE: EX	PLAIN ALL DI	ISCREPANCI		
	1.	Samples Hand Delivered or Shipped	Carrier /	ed E	Airbill# 79238938	82:
	2.	Custody seals on coolers or shipping container intact, signed and dated?	□ Yes	□ No	□ No Seals Comments	
	3.	Outside of coolers or shipping containers are free from damage?	□ Yes	□ No		
	4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	₽ Yes	□ No		
	5.	Samples received cooled or ambient?	Temp L	5 °c	Cooler # ERC - 02 - 5	01
•	6.	Custody seals on sample containers intact, signed and dated?	₹ Yes	□ No '	□ No Seals	
1	7.	coc signed and dated?	T) Yes	□ No		
	8.	Sample containers are intact?	· 🖸 Yes	□ No		
	9.	All samples on coc received? All samples received on coc?	ti Yes	□ No		•
	10.	All sample label information matches coc?	E Yes	□ No		
	11.	Samples properly preserved?	□ Yes	□ No		
	12.	Samples received within hold times? Short holds taken to wet lab?	El Yes	□ No		
	13.	VOA, TOC, TOX free of headspace?	☐ Yes	□ No	E N/A	
	14.	QC stickers placed on bottles designated by client?	□ Yes	□ No	₫ N/A	. •
	15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	O Yes	□ No		:
	16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	□ Yes	□ No	E No Discrepancies	
		· ·				



Lionville Laboratory, Inc. BNA ANALYTICAL DATA PACKAGE FOR TNU-HANFORD F03-025; # 2460

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID		LVL	#	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
			· · · · · · · · · · · · · · · · · · ·					
B17RT8		004		S	03LE1624	12/07/03	12/16/03	12/19/03
B17RT8		004	MS	S	03LE1624	12/07/03	12/16/03	12/19/03
B17RT8		004	MSD	S	03LE1624	12/07/03	12/16/03	12/19/03
LAB QC:								
	1. A							
SBLKGX		MB1		S	03LE1624	N/A	12/16/03	12/19/03
SBLKGX	•	MBl	BS	S	03LE1624	N/A	12/16/03	12/19/03
SBLKGX		MB1	BSD	S	03LE1624	N/A	12/16/03	12/19/03



Client: TNU-HANFORD F03-025

LVL#: 0312L369

SDG/SAF # H2461/F03-025

W.O. #: 11343-606-001-9999-00

Date Received: 12-15-2003

SEMIVOLATILE

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted according to Lionville Laboratory OPs based on method 3540 on 12-16-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 12-19-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The sample was extracted and analyzed within required holding time.
- 3. Non-target compounds were detected in the sample.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. Internal standard area and retention time criteria were met.
- 8. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Michael Taylor

President

Lionville Laboratory Incorporated

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Date

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 7 pages.

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- **NQ** = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closes internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

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GLOSSARY

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.

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TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: Manually added peak not found by automatic quan program.
- PA Peak Assignment: Quan report was changed to reflect correct peak assignment.
- RI Routine Integration: Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP Split Peak: The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Co-elution/ Background: Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI Proper Integration: A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

LVL-21-21-035/A-08/93



Semivolatiles by GC/MS, Special List Report Date: 12/24/03 13:31 Client: TNU-HANFORD F03-025 H 2461 Work Order: 11343606001 Page: 1a

Cust ID:	B17RT8	B17RT8		B17RT8		SBLKGX	SBLKGX BS	SBLK	GX BSD	
Sample RFW#:	004	004 MS		004 MSD		03LE1624-MB1	03LE1624-MB1	03LE	1624-MI	в1
Information Matrix:	SOIL	SOIL		SOIL		SOIL	SOIL		SOIL	
D.F.:	1.00	1.00		1.0	0	1.00	1.00		1.00	
Units:	ug/Kg	ug/Kg		ug/K	g	ug/Kg	ug/Kg		ug/K	g
								· · · · ·		_
Nitrobenzene-d5	73 %		\$	72 	ક	77 . %	.76 %		. 79	8
Surrogate 2-Fluorobiphenyl	70 %		\$	75	%	75 %	75 %		77	용
Recovery p-Terphenyl-d14	75 %	90		90	8	93 %	83 %		89	å
Phenol-d5	85 %	98		87	왕	92 %	93 %		96	8
2-Fluorophenol	84 %	94		85	8.	92 %	91 %		91	
2,4,6-Tribromophenol	67 %		5	78	%	72 %	73 %		80	90
							l=====================================	Tamme		
Phenol	350 U		5	78	8.	330 U	79 %		83	%
bis(2-Chloroethyl)ether	350 U		J.	350	U	330 U	330 U		330	U
2-Chlorophenol	350 U	• =	š	73	%	330 U	73 %		77	. 8
1,3-Dichlorobenzene	350 U	350 t		350	Ü,	330 U			330	Ü
1,4-Dichlorobenzene	350 U	69		63	왕	330 U			68	8
1,2-Dichlorobenzene	350 U		J	350	Ü	330 U	330 U		330	U
2-Methylphenol	350 U		J-	350	U	330 U	330 U		330	Ĺ
2,2'-oxybis(1-Chloropropane)	350 U	and the second second	J.	350	Ü	330 U	330 U			U
3- and/or 4-Methylphenol	350 U		J ·	350	U	330 U	330 U			τ
N-Nitroso-Di-n-propylamine	350 U	80	ે	74	જ	330 U	= -		78	ą
Hexachloroethane	350 U	350	J	350	U	330 U			330	Ţ
Nitrobenzene	350 U		J (350	U	330 U			330	τ
Isophorone	350 U	350	J	350	U	330 U			330	τ
2-Nitrophenol	350 U	350	J	350	U	330 U			330	Ţ
2,4-Dimethylphenol	350 U		J i	350	U	330 U			330	τ
bis(2-Chloroethoxy)methane	350 U	350 1		350	U	330 U			330	ζ
2,4-Dichlorophenol	350 ປັ	350	J .	350	U	330 U			330	τ
1,2,4-Trichlorobenzene	350 U	70	हें :	66	ક	330 U	- 7		69	. 9
Naphthalene	350 U	350	ŋ, ·	350	U	330 U			330	Į
4-Chloroaniline	350 U	350	J	350	U	330 U	330 U	•	330	τ
Hexachlorobutadiene	350 U .	350	J	350	U	330 U	330 U		330	τ
4-Chloro-3-methylphenol	350 Ü	76	8	76	r	330 U			76	8
2-Methylnaphthalene	350 U	350	Ü.	350	Ü	330 U	330 U		330	Ţ
Hexachlorocyclopentadiene	350 U	350	U	350	U	330 U	330 U		330	Ţ
2,4,6-Trichlorophenol	350 U	350	Ū	350	Ū	330 U	330 U		330	τ
2,4,5-Trichlorophenol	870 U	870	Ū	8.70	U	830 U	830 U		830	ŧ
*= Outside of EPA CLP QC limits.									* •	

	Cilent: INO.	MNEORD FU3-023	11 2 101 MOL	k Order: 11343	000001	Page: 1b		
RFW Batch Number: 0312L369 Cust ID:	B17RT8	B17RT8	B17RT8	SBLKGX	SBLKGX BS	SBLKGX BSD		
	$\frac{T}{X} = \frac{1}{2} \left(\frac{1}{2} - \frac{1}{2} \right)$							
RFW#:	004	004 MS	004 MSD	03LE1624-MB1	03LE1624-MB1	03LE1624-MB		
				500 **	220 TT	330		
2-Chloronaphthalene	350 U	350 U	350 U	330 Ŭ	330 U			
2-Nitroaniline	870 U	870 U	870 U	830 U	830 U	830		
Dimethylphthalate	350 U	350 U	350 U	330 U	330 U	330 330		
DimethylphthalateAcenaphthylene	350 U	350 U	350 U	330 U	330 U			
2,6-Dinitrotoluene	350 U	350 U	350 U	330 U	330 U	330		
2,6-Dinitrotoluene 3-Nitroaniline	870 U	870 U	870 U	830 U	830 U	830		
Acenaphthene	350 U	70 %	73 %	330 U	68 %	71		
2,4-Dinitrophenol	870 U	∃870 °U)	870 U	830 U	830 U	830		
1-Nitrophenol	870 ซ	66 %	68 %	830 Ü	66 %	66		
Dibenzofuran	350 U	350 U	350 U	330 U	330 U	330		
2,4-Dinitrotoluene	350 U	76 %	79 %	330 U	70 %	75		
Diethylphthalate	350 U	350 U	350 U	-330 U	330 U	330		
1-Chlorophenyl-phenylether	350 U	350 U	350 U		330 U	330		
Fluorene		350 U	350 U	000	330 U.	330		
1-Nitroaniline	870 U	870 U	870 U	830 U	830 U	830		
4,6-Dinitro-2-methylphenol	870 U	870 U	870 U	830 U	830 Ü	830		
N-Nitrosodiphenylamine (1)	350 U	350 U	350 U	330 U	330 U	330		
4-Bromophenyl-phenylether	350 U	350 U	350 U	330 U	330 U	330		
Hexachlorobenzene	350 U	350 U	350 U	330 U	330 U	330		
Pentachlorophenol	870 U	48 °	48 %	830 Ū	47 %	53		
Phenanthrene	350 U	350 U	. 350 ປັ		330 U	330		
Anthracene	350 U	350 U	350 U	· ·	330 U	330		
Carbazole	350 U	350 U	350 U	330 U	330 U	330		
Di-n-Butylphthalate	350 U	350 U	350 U	330 U	330 Ū	330		
Fluoranthene	350 U	350 U	350 U	330 U	. 330 U	330		
Pyrene	350 U	77 %	83 %	330 U	72 %	78		
Butylbenzýlphthalate	350 U	350 U	350 U	. 330 U	330 U	330		
3,3'-Dichlorobenzidine	350 U	350 U	350 U	330 U	330 U	330		
Benzo(a)anthracene	350 U	350 U	350 U	330 U	330 U	330		
Chrysene	350 U	350 U	350 U	330 U	330 U	330		
bis(2-Ethylhexyl)phthalate	350 U	350 U	350 U	330 U	330 U	. 330		
Di-n-Octyl phthalate	350 U	350 U	350 U	330 U	330 U	330		
Benzo(b) fluoranthene	350 U	350 U	350 U	330 U		330		
Benzo(k)fluoranthene	350 U	350 U	350 U			330		
Benzo(a)pyrene	350 U	350 U	350 U	330 U	330 U	330		
Indeno(1,2,3-cd)pyrene	350 U	350 U	350 U	330 U	330 U	and the second s		
Dibenzo(a,h)anthracene	350 U	350 U,	350 U	330 U	330 U	.330		
Benzo(g,h,i)perylene	•	350 U	350 U			330		
	-	2-2	0.50	330 U	. 330 U	330		
Tributylphosphate (1) - Cannot be separated from Dip	350 U	350 U	350 U		. 330 0	. 330		

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

i :		-	3.0	
B17RT8	1 3 W	3 4.4	19	5 45
		88 · *		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: <u>TNU-HANFORD F03-025</u>

GPC Cleanup: (Y/N) N

Matrix: (soil/water) SOIL Lab Sample ID: 0312L369-004

Sample wt/vol: 30.0 (g/mL) \underline{G} Lab File ID: <u>C121907</u>

Level: (low/med) LOW Date Received: 12/15/03

% Moisture: 4 decanted: (Y/N) Date Extracted: 12/16/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/19/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

pH: _ CONCENTRATION UNITS: Number TICs found: _5 (ug/L or ug/Kg) <u>ug/Kg</u>

1		<u> </u>	-	1
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====================================	=======================================	======		
1.	ALDOL CONDENSATE	3.935	100	JAB
2.	ALDOL CONDENSATE	4.368	2000	JAB
3.	ALDOL CONDENSATE	4.923	90000	JAB
4.	UNKNOWN	6.049	400	JB
5.	UNKNOWN	10.614	100	JB
	The second secon		ration and the street of	1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

= |SBLKGX ---

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

TNU-HANFORD F03-025

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE1624-MB1

Sample wt/vol: 30.0

(g/mL) <u>G</u>

Lab File ID: <u>C121904</u>

Level: (low/med) LOW

Date Received: 12/16/03

% Moisture: ____ decanted: (Y/N)__

Date Extracted: 12/16/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/19/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _

CONCENTRATION UNITS:

Number TICs found: . 5

(ug/L or ug/Kg) ug/Kg

		1		
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~~~=======			=======================================	=====
1.	ALDOL CONDENSATE	3.944	80	JA
2.	ALDOL CONDENSATE	4.326	1000	JA
3.	ALDOL CONDENSATE	4.871	70000	JA
4.	UNKNOWN	6.050	300	J
5.	UNKNOWN	10.615	70	J ˈ
		1		[[

Eat Final Proj. Sampling Dete   Eat Final Proj. Sampling Det	Est. Final Pro). Sampling Date Project # (1,247 c 0 ty. 0 01. 9999 - 97 Project Contactory Project Name (1,247 c 0 ty. 0 01. 9999 - 97 Project Contactory Project Name (1,247 c 0 ty. 0 01. 9999 - 97 Lionville Laboratory Project Name (1,247 c 0 ty. 0 01. 9999 - 97 Lionville Laboratory Project Name (1,247 c 0 ty. 0 01. 9999 - 97 Lionville Laboratory Project Name (1,247 c 0 ty. 0 01. 9999 - 97 Date Rec'd	Fedex		Peny	12/5/	3 0950	$\Box$	COM				OR	IGN	Δì	1	ľ		C Recoi	rd? Y	or N		lolding	Times	or N		ooler emp	
Cilent   Multiple   Laboratory   Color   Col	Client Intervention	Relinquishe by	1	7 1 1 W	Date	Time					R			Date	TI	те	San	nples La	abels a	nd		. A	018/0	or N			mple Rec'
Cilent IDDescription   Cilent IDDescription	Client   TNUL	12 8 = 1									5. 6.										4	) Samp	les	5	T s	ample	Y or N
Gilent TNUMBUT And   F03-025   Refrigerator	Client TNULtwifterd F03-025   Refrigerator #   1	1c 0 :	ci, F	NO. ' NO	i. PO4. S	4		- 31 A.			4.	· <del></del>			· 				**		3	Recei	ved in G	Good ,	ر (a)	Presen	
Gilent TNUMBUT And   F03-025   Refrigerator	Client   Thutture   F03-025	MET (1):	RCRA	( + Sb. Bo	, Bi, Cu,	Mi			·	· 	3.	· <del></del>		<del></del>				<u></u>	<u>-</u>	<del> </del>	-   _				P	ackage	Y or I
Cilent TNULLHAMPER   103-025   Refrigerator #   1	Cilent TNULturiford								. ·		2.			· · · · · · · · · · · · · · · · · · ·					· <del>···</del> ,		-   н	and De	livered		Pi	ackage	Y or t
Cilent TNULLHAMPER   103-025   Refrigerator #   1	Cilent TNULturiford	Special Instruc	uons:	M.+.	~ √ . Fol·	.461			1 .		1.	-	er god Ger	- '	· · · ·						4	•	were:		Та	mper Res	sistant Seal
Cilent TNULTM than	Cilent TNULTAMENT P03-025  Refrigerator #	Canalat time	L .	546	+ -^-	1125		<u> </u>	DATE	/REVIS	SIONS	<b>:</b>			<u> </u>	1	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Lionvi	le Lah	orator	/ Use C	nly
Cilent TNULTM than	Cilent   TNULTANT   FO3-025   Refrigerator #				of the state of th		· · · · · · · · · · · · · · · · · · ·		<b> </b>	-						<u> </u>	-					<u> </u>	ļ		<u> </u>	<del> </del>	
Cilent TNULTM than	Cilent TNULTENT First																										
Gilent TNUMWhaterd	Cilent TNU How for C P3-025  Refrigerator #	F • Fish					1, 41.50			士															L	1	
Cilent TNULTWH-fared	Cilent TNULTWATORD F03-025  Est. Final Proj. Sampling Date  Est. Final Proj. Sampling Date  #/Type Container  #/Type Con	Wi- Wipe X - Other	· · · · · · · · · · · · · · · · · · ·							- -									. 1	<del>                                     </del>			<del>                                     </del>		1		
Cilent   TNUL   Formulation    Cilent   TNULtantend   F03-025   Refrigerator #	Leachate	7						-					12			ļ	1		0	<u> </u>		-	<b></b>		-		
Cilent   TNULWWard   F03-025   Refrigerator #	Cilent   TNULtwitterd   F03-025   Refrigerator #   I   G   G   G   G   G   G   G   G   G	Dia Dram							<b> </b> -			alalka		-			-	<u></u>	,	2		ļ ,	7			1	<del>  -</del>
Cilent   TNULtput bird   F03-025   Retrigerator #	Cilent   TNULtwiffred   F03-025   Refrigerator #   1   G   G   G   G   G   G   G   G   G	DS - Drum										2/6/03		<u> </u>			ļ								1	1	
Refrigerator #	Client TNULTAMENT Project P03-025  Refrigerator #	W - Water D - Oil								S					1 195	1	1			<u> </u>							
Cilent   TNU   Wattered   103-025   Refrigerator #	Client TNUthwhere F03-025  Refrigerator #	S - Soil SE - Sediment SO - Solid	Lab ID		Cilent ID/Des	cription		Cho (I	osen ✔)	Matr	rix			-0	:	0606 H	OHBGX	opcB	0625 X 00000	06 cs c	Mer@	ZCMO	110 H	)	2C/26	ISFD FOGGR	
Cilent TNULTANT FOR F03-025 Refrigerator # 1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Cilent TNUttonford F03-025   Refrigerator #   1   6   6   6   6   6   6   6   6   6							Ма	atrix							1	1	. <del></del>	Llonv	ille La	borate	ory Us		 	<u> </u>	(1142)	
Cilent TNULTWIFFIC F03-025  Refrigerator #    G G G G G G G G G G G G G G G G G G	Cilent   TNU   How forch   F03-025   Refrigerator #   1   6   6   6   6   6   6   6   6   6	Date Rec'd	12/13	103	. Date Due	1	-14-0	3						VOA	<del></del>		Herb	PCBs	Tex Tex	tookot U oote	Metal		minu.	,	7.6 82/83	当を	
Cilent   TNULTWIFFITC   F03-025   Refrigerator #	Cilent   TNUttwiffered   F03-025   Refrigerator #   1   G   6   G   G   G	OC_SPEC	÷	Del_570	TAT	30 d	ays			Pres	servat	ives			OBO	ANIC				المحر	1812		4			2	
Cilent TNULTON For F03-025 Refrigerator # 1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	ABC   D E F S YEU K L   M   Elevation     ABC   D E F S YEU K L   M   Elevation     ABC   D E F S YEU K L   M   Elevation     ABC   D E F S YEU K L   M   Elevation     ABC   D E F S YEU K L   M   Elevation     ABC   D E F S YEU K L   M   Elevation     Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elevation   Elev	Lionville Lab	ratory	Project Man	agerO	. Voh	nsor			Volu	lme			40	7 A 69	60	40	120	120	40	250	50D	- 1 kg -		250	-1,	
Cilent         TNULtwickers         F03-025         Refrigerator #         1         6         6         6         6         6           Est. Final Proj. Sampling Date         #50.00         Liquid         Liquid         1         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6         6	ABC   D E F G   KI   K L   M   IONVILLE LABORATORY	and the second second second	1		10: 001:	11414	9.V	1 A S				<u> </u>		ت مامور	14	AGC_	HGC.	AGC	<i>HUL</i>	<u> 3400.</u>	AOL	4C			au		
Cilent TNU Humford F03-025 Refrigerator # 1 6 6 6 6 6 6 6	ABC DEF & HIU K L M   HONVILLE LABORATIONS     ABC DEF & HIU K L M   HONVILLE LABORATIONS     Client TNU Honvard P03-025   Refrigerator #   1   6   6   6   6   6   6   6   6   6					0000			100	#/Ty	pe Co	ntainer		21/10					A.a.			lot.					
	ABC DEFENDINEL MILLIANGIATORY	Cilent	1 Hw	ford	<u> F03-</u>	025	1			Refr	lgerat	or#	1	1	e'a i te	G		6		1	6	6			6		

FLUOR Hanford Inc.		RAL PLATEAU (	CHAIN OF	CUSTOD	Y/SAMPLE				F03	-025-001	Page 1	of 1
Collector POPE / PFISTER / Hughes	Company TRENT	Contact , STEVE	Telephor 373-50	n <b>e No.</b> 589		P	roject Coordi RENT, SJ	nator P	rice Code	8N		rnaround
Project Designation 59 200-LW-1/LW-2 Characterization - Soil	Sampling 216-B-5	Location 58 (0.5 ft)	7 1	in the first			AF No. 03-025	A	ir Quality		45	Days
ice Chest No. ERC 02 501	Field Logi	Field Logbook No.  COA  119143ES10  Method of S  FEDERAL										
Shipped To 1970 10-29-03 EBERLINE SERVICES (Formerly TMA)	Offsite Pr	operty No.	A04	0 05	9	1	Bill of Lading/	Air Bill No	SEZ	= 05 F	, <u> </u>	
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	Coal 4C		· ·						
Special Handling and/or Storage	7	Type of Container	аG	aG	/						·	_
		Volume	60mL	60mL								
SAMPLE ANALYSIS		2.7	Pesticides - 8081	Chloro- Herbicides - EPA8151	3							
Sample No. Matrix * Sam	ple Date	Sample Time							10000	77-42-63-63	149	
<u></u>	5-3	15:00		<u> </u>				716	10	B 171	KY6	<del>                                     </del>
				<u> </u>						†		
				<u> </u>		······································						-
			1									
Relinquished By/Removed From Date/Time 1230 Received By/Removed From Date/Time 1230 Received By/Removed From Date/Time 1245 Received By/Removed From Date/Time Received By/Removed From Date/Ti	0-026 F ved By/Stored I	Fridge # 1 12  Pridge # 1 12  Dries Strong Three 12/08	-3-3	:00 /230 3/63 	sonnel not avilinquish samp	ailable to les from //Z/					Date/Time	Matrix * S=Soil SE=Sediment SO=Soids SE=Sledige W = Water O=Oll A=Air DS=Drum Soil DL=Drum Liq T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other
FINAL SAMPLE Disposal Method		•	•	and Spirit A	Dispos	ed By					Date/Time	•

FLUOR Hanford Inc.		CEN	TRAL PLATEAU (	CHAIN OF	CUSTOR	Y/SAMPL	E ANA	LYSIS REC	QUEST	I	03-025-003	Page 1	of
Collector + DD DESTO	1 Hughes	Compa TRE	ny Contact NT, STEVE	Telephor 373-50				Project Coo TRENT, SJ	rdinator	Price Cod	e 8N	Data Tu	
Project Designation	oil		ing Location B-58 (17.5 - 20 ft)					SAF No. F03-025		Air Qua	lity []	45	Da
Ice Chest No. ERC 02 -	501	Field I	ogbook No.		COA 119143ES	S10 .		Method of S FEDERAL		<u>s</u>			
Shipped To TWD 10-29-0	3. Pocra	Offsite	Property No. A	340	059			Bill of Ladi	ng/Air Bill	I No.	9E 08	<u> </u>	
POSSIBLE SAMPLE HAZARDS/R			Preservation	Cool 4C	None								
			Type of Container	G	G/P								
Special Handling and/or Storage			No. of Container(s)	1	1								
			Volume	250mL	250 L								
Sz	AMPLE ANALYSIS			See item (1) in Special Instructions.	See iter (2) in Special Instructions.								
Sample No.	Aatrix * Sa	mple Date	Sample Time										
B17RT3	soil 12	-6-3	15:45	-						77	4= 70	13/7	10
B17RT6	تے/ SOIL	2-6-	3 15:45	·	<u> </u>				,	77	670	3171	27
i ja		, , , , , , , , , , , , , , , , , , , ,			1.0							<u> </u>	
							<u> </u>				·		
						<u> </u>	<u> </u>						$\perp$
Relinguished By/Removed From	12-6-3 m ate/Time 1230 Rec	eived By/Store	ed in De De de In De de In De	atc/Time 6-3 /8 atc/Time /2	7 The l range	organics from Chromium Hex	analyze pl the WTPI - 7196; N	I within 24 hou I-D analysis, S D2/NO3 - 353.2	e SAF COC ; Sulfides - 9	Comments for		38.	S=Sc SE=S SO=S SI=S
Green Thomas Ary Thomas Religioushed By Removed From	ate/Time /245 Rec		Sign De 12/0	or 12/8/ ate/Time 14/03 12 ate/Time	Fine	vicker-03; Gaill vium-232); Till	mia <del>Spec</del> dum 113;	Radum (Radu Carbon-14; Sin	<del>in Jet, Ka</del> d <del>Intimir 89,9</del> (	7 Total St	2p /2/2/	3	W = 0=0 A=A DS=I DL=I T=Ti
SJANES/JUL- 12 12 Relinguished By/Reinoved From FRAEX 13(15(6)	05 1000 f ate/Time Rec	eived By/Store	ed In Da	nte/Time		ersonnet not Relinquish sa Ref# <u>//</u> Ron	imples fr	m 3728			·		W(=1 t.=t.i- V=V( X=0)
Relinquished By/Removed From  LABORATORY   Received By	ate/Time Rec	eived By/Store	Di Di	ate/Time Tit	le	· ·	** * .				·	Date/Time	
SECTION								r.	-	•		out I IIII	
FINAL SAMPLE Disposal Method							sed By				<del></del>	Date/Time	

		the second second	and the second second										1.	
FLUOR Hanfor	rd Inc.		CENTI	RAL PLATEAU (	CHAIN OI	CUSTOE	Y/SAMPL	E ANA	LYSIS REQU	EST	F0:	3-025-004	Page 1	of 1
Collector 4DP H	Stell High	s	Company TRENT	Contact , STEVE	Telepho 373-5	ne No. 689			Project Coordi TRENT, SJ	nator	Price Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterize	zation - Soil		Sampling 216-B-5	Location 58 (22.5 - 25 ft)					SAF No. F03-025		Air Quality	v 🗀	45	Days
Ice Chest No.	2501		Field Logi	- N-3510-1		COA 119143ES	310		Method of Ship FEDERAL E	XPRESS				
Shipped To That 10 79 - 29 - EDERLING SERVICES (Fo	8-03 PLC	a	Offsite Pr	operty No AOY	0 05	9			Bill of Lading	'Air Bill I	vo. S <i>€</i> €	-08PC	-	
POSSIBLE SAMPLE HAZA	ARDS/REMARKS													
	•			Preservation	Cool 4C	Cool 4C	Cool 4C	Cool	4C None	None	None	<b>/</b>		
Cracial Handling and law			7	Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P			
Special Handling and/or S	storage		-	o. of Container(s)	3	1	3	1	1	1	1			
				Volume	40mL	120mL	40mL	120m	ıL 250mL	500mL	, 500m.			
	SAMPLE ANA		YOA - 8260A (TCL)	See item (1) in Special Instructions	Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Ethylene	PCBs - 1	See item (2) in Special Instructions.	See item (3 Special Instruction	Special					
1			:				Ethylene glycol}				\$\langle \tilde{\chi}_{\chi}			
Sample No.	Matrix *	Sample	Date	Sample Time									200	
B17RT8	SOIL	12-	7-3	10:30							/	TIGT	O'BIT	RVI
					1							:		
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Pe	rsonnel not avai	lable to				
						and April 1		re R	elinquish samples ef# <i>]A</i> _on <i>[Z_]</i>	from 372	28			
									· · · / ///	I	/ L			
CHAIN OF POSSESSIO Relinquished By/Removed From	Date/Time 160	Received	trailer	RMA Fridge 1	ite/Time /6	The l		analyze pl	NS H within 24 hours o H-D analysis. See S				kerosone	Matrix *  S=Soil SE=Sediment SO=Solid
Relinquished By/Removed From SHE Trailer KMA F	Pate/Time 1230 1 1092 124-03	mea		) Brownarter		3 Diese	Range - WTP	H-D (Tol	.) {Phenol}; Semi-V tal petroleum hydro ne Range - WTPH-C	carbons - di				Si≠Sludge W = Water O=Oil
Refinance had by Removed From	DWW.Sezg	<u>30 K</u>	By/Stored In	-C 124	16/Time 143	ICP N			ertrace) (Arsenic, B ce Add-On) (Antim					A*Air DS*Drum Solids DL=Drum Liquids T=Tissue
enquished By/Removed From LD+#20000	6 DIL-03	Received MY	By/Stored in	וושטונוווויווו	ite/Time	(3) ICyan		0 (Chlori (Soil) - 90	ide, Fluoride, Nitrate 145	e, Nitrite, P	hosphate, Sulfate	; Ammonia - 3	50.3; Total	Vi≈Wipe L=Liquid V=Vegetation
Returnational By Removed From	MUSTINDIA	3 PUL	By/Stored In	3728 12	te/Time [1]		an spor - raide repaintain zar		Hony 129, Cooking		la /-	- 19 operatopiana Anglindrich de la mare	American-	X≖Other
Relinguished By/Removed From	OB Date/Time		By/Stored In	l 12/20 110	te/Time				K	/2/	2/3			
LABORATORY   Received By			15/13	0950 R	re bu	le : IPEI	m	· · · · · · ·				Da	ite/Time	·
FINAL SAMPLE Disposal Mo		<u> </u>	<u> </u>	0,00		<u> </u>	Dispos	sed By				D	ate/Time	
	<del></del>	<del></del>	<del></del>		<del> </del>									

FLUOR Hanford	i Inc.	CEN	NTRAL PLATEAU C	HAIN OF	CUSTOD	Y/SAMPL	E ANA	LYSIS REQU	EST		F03-	025-005	Page 1	of <u>1</u>
Collector + DD 11	Sporthoghe	S Compa	nny Contact NT, STEVE	Telephor 373-56	ie No. 589			Project Coordi TRENT, SJ	nator	Price	Code	8N	Data Tu	e trage and
Project Designation 200-LW-1/LW-2 Characteriza	ition - Soil	Sampl 216	Ing Location -B-58 (27.5 - 30 ft)		ere officials			SAF No. F03-025		Air Ç	Quality		45	Days
Ice Chest No. ERC	02501	Field 1	Logbook No.		COA 119143ES	Method of Ship FEDERAL E	ment XPRESS	3		- ,				
Shipped To TYVT 10-7 EBERLINE SERVICES (For	19-02 Recra	Offsite	Property No.	2040	059	7		Bill of Lading/	Air Bill	No.	,ee	OSP	<u>_</u>	
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	None									
Special Handling and/or S	torage		Type of Container	G	G/P						-			<u> </u>
			No. of Container(s)	1	1/									
			Volume	250mL	250 L									
	SAMPLE ANALYS	SIS		See item (1) in Special Instructions,	See item (2) in Special Instructions.									
			er en		13 2/2						. •	-		
Sample No.	Matrix *	Sample Date	Sample Time			\$185 m	0.00	e e e de de		Gran an	STALL PROFES			2002
B17RV5	SOIL	12-7-	3 14:10	X	<u> </u>		<u> </u>		710	= 7	0	BIT	RVZ	
<u> </u>					All organization	-	-		ļ					<u>  </u>
									ļ		· · · · · · · · · · · · · · · · · · ·			-
			<u> </u>					· ·	<u> </u>	_				<del> </del>
CHAIN OF POSSESSIO	N	Sign/Prin	Names	l : · · ·	SPEC	L CIAL INSTE	I RUCTIO	NS .	<u>.</u>				<u> </u>	Matri
Relinquistied By/Removed From	300 D-73	Received By/Stor		te/Time 2-3/16:	The la	aboratory is to	analyze pl	I within 24 hours o I-D analysis. See S	f sample r SAF COC	eceipt. T Commen	The laboratests for hold	ory is to report ing time issues	kerosene	S=Soil SE=Sedia
Relinquished By/Removed From  Mooza Ref #1	Date/Time 1230	Received By/Stor		ite/Time	2.30 (1) C	lickel 63; Gam	ina Spec -	O2/NO3 - 353.2; Si Radium (Radium-	226, Radh	un-228)	Technetiu		:Thorium	SO*Solin SI=Studg W = Wat O*Oil
Relinquished By/Remover From	Date/Time /24/5	Received By/Stor	ed In BRC Da	ite/Time		110H-232}; Tri	nan - 113;	Carbon-14; Stronti	un-89,90	l'otar	# RO	12/2/	3	A=Air DS=Drus DL=Dnu
Relinquished By/Removed From		te/Time						•				T=Tissue W1=Wip L=Liquie		
Relinquished B/Removed From	Date/Time	Received By/Stor		ite/Time	מ ו	rsonnel not elinquish sar	nnies fro	m 3728						V=Veget X=Other
Relinquished By/Removed From	Date/Time	Received By/Stor	yd In Da	nte/Time	Re	ef# <u>}/A</u> on <u>/</u>	12/12	<u> </u>					: 	
LABORATORY Received By SECTION				Tit	le							· r	Date/Time	
	thod	<del></del>				Diana	osed By						Date/Time	

Collector 1	R Hanford	inc.	A C N VComp	NTRAL PLATEAU C	Telephor	ie No.	Y/SAMPLI	1	Project Coordi	nator	rice Code	-025-008 ON	Page 1  Data Tu	of <u>1</u> \
Project Designation 200-EW-1/LW-2	<b>X</b>		Sampl	Ing Location	373-50	189	· · · · · · · · · · · · · · · · · · ·		FRĚNT, SJ	<del></del>	ir Quality	•		Days
lce Chest No.				-B-58 (97.5 -100 ft) Loghook No.		COA 119143ES	10		F03-025 Wethod of Ship FEDERAL E			· · · · · · · · · · · · · · · · · · ·		
Shipped To EBERLINE SER			Offsite	1.7.	040				Bill of Lading		· S&	03P	<	
POSSIBLE SAM				Preservation	Cool 4C	None								
Cart III		1		Type of Container	G	G/P	<del> </del>					<del> </del>		┪
Special Handlin	ig and/or St	orage		No. of Container(s)	1	1				· · · · · · · · · · · · · · · · · · ·		<u> </u>		
			en generale de la companya de la co La companya de la co	Volume	250mL	250mL								
		SAMPLE ANAI	LYSIS	<u> </u>	See item (1) in Special Instructions.	See item (2) in Special Instructions.								
						18/4								
Sample N B17RW4	<b>√</b> 0,	Matrix *	Sample Date	Sample Time		1						9	h-11.	1 4
B1/KVV4		SOIL	12-10-03	3 1245	-X-	/					TIE	70 D	17RU	10
								.				<u> </u>	<del>                                     </del>	<del>                                     </del>
													-	
	**************************************					<u> </u>	<u> </u>	<u> </u>	<u>l</u>	<u> </u>	<u> </u>	<u> </u>		
CHAIN OF I		YNSV 12-16-6	Sign/Prin S Received By/\$to 3	red In # 1 MO-026	1003	The I	organics from	analyze pH the WTPH	I within 24 hours of I-D analysis. See	SAF COC Co	mments for hole	ding time issue	rt kerosene es	Matrix S=Soit SE=Sedin SO=Sotid
Belinquished By/Remo	- Land Community of the land o	Date/Time 12-11-63 100  Date/Time 10		an (m) nash	_ 12/11	<b>3</b> (2)_1	Vickel-63: Gam	ıma Spec	02/NO3 - 353.2; S <del>Radium (Radium Carbon-14; Stront</del>	226, Radium-	228); Techneti	<del>um-99; Isotopi</del>	.,	St≖Sludge W = Wake O=Oil A⇒Air
Relinquished By/Remo	oming	Date/Time 10 Date/Time			ate/Time 12-11-02 ate/Time	2					K	12/2	(3	DS=Drnt DL>Drn T=Tissue
KEF 3 133	72812	1203 110		Iffle 121203	1100	2 F	ersonnet not Relinquish sa	t available	: to m 3728		,		٠	Wi≈Wips L≈Liquid V=Veget
Relinquished By/Remo	oved From			<u> </u>	ate/Time	F	keringuisii sa kef# <u>28</u> on	15/15	103				,	X≈Other
Relinguished By/Remo	oved From	15/03 095	Received By/Sto	red in D	ate/Time		•		•					<u></u>
LABORATORY SECTION	Received By				. <b>T</b>	itle							Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Me	allod			<del></del>		Dispo	osed By		· · · · · · · · · · · · · · · · · · ·		.*	Date/Time	

FLUOR Hanford	Inc.	CE	NTRAL PLATEAU	CHAIN OI	F CUST	rody	//SAMPL	E ANA	LYSIS	REQUEST		F03-	025-044	Page <u>I</u>	of 1
Collector ADC/D	1870 / HOAL		any Contact ENT, STEVE	Telepho 373-5					Project TRENT	Coordinator , SJ	Pr	ice Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Characteriza	tion - Soil		ling Location 5-B-58 (22.5 - 25 ft)						SAF N F03-02		Ai	r Quality		45 1	Days
Ice Chest No. ER C 0	2501	Field	Logbook No.  HNF-N-351	· · · · · · · · · · · · · · · · · · ·	COA 11914	43ES1	0			i of Shipmen ERAL EXPRI					
Shipped To TYY 510-2			D. D N.	040	05	59			Bilt of	Lading/Air I	Bill No.	0370	) NJ	-	
POSSIBLE SAMPLE HAZAI	RDS/REMARKS		Preservation	Cool 4C	No	nae									
Special Handling and/or S	torage		Type of Container	G	G/										
			No. of Container(s)  Volume	250mL	250										
**	SAMPLE ANAL	YSIS	, volume	See item (1) i Special Instructions,	Spe	dial .									
Sample No.	Matrix *	Sample Date	Sample Time									3 (2.6)	14.02		
B17RV2	SOIL	12-7-	3 10:30	> X	/_			<u> </u>				The	20 2	1786	/
		<u></u>			-	•		-							
		·		:	-			<u> </u>			•				
CHAIN OF POSSESSIO  Relinquished By/Removed From  Chair Color Home From  Chair Color Home From  Chair Color Home From  Color Color Home From  Color Co	Date/Time	Received By/St  Site tro Received By/St  TMORE  Received By/St  Received By/St  Received By/St  Received By/St  Received By/St  Received By/St	ciller RMA Fridger ored in 1990 ONLY ONLY ONLY ONLY ONLY ONLY ONLY ONLY	Date/Time  Date/Time  Date/Time  Date/Time  Date/Time  Date/Time	1000 1000 1000 1010 1010	The larange (1) C (2) N (Thor	organics from hromium Hex ickel 63; Gine num-232); Tri  sonnel not: linguish san # 114 on 1	analyze p the WTF - 7196; N - 7196;	oH within PH-D anal Ph-D a	24 hours of sam ysis. See SAF ( - 353.2; Sulfide (Radina-226,) 14; Strommin-8	COC Con s - 9030; Radium 2	oments for hold Oil & Grease	ling time issue - 413.1 un-99; Icatopi  P / Z_/	<b>:5</b> ,	Matrix *  S=Soit SE=Sediment SO=Solid SI=Shudge W = Wajer O=Oit A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
SECTION Received By	by: Fed. Ex	12/15/	63 0950 K	ec.by	J	evi		<u>.</u>						·	
FINAL SAMPLE Disposal M DISPOSITION	ethod						// Disp	osed By				·		Date/Time	

### Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD 12-15-03 Date: Purchase Order / Project# / SAF#/SOW#/Release#: F03-025 LvLI Batch #: Sample Custodian: 03/21 369 NOTE: EXPLAIN ALL DISCREPANCIES 792389388227 Airbill# Carrier Samples Hand Delivered or Shipped Custody seals on coolers or shipping □ No □ No Seals Comments container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC - 02 - 501 1,5 00 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No ☐ No Seals signed and dated? 7 coc signed and dated? □ No Sample containers are intact? . D∕Ýes □ No All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? 1 Yes □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No 14. QC stickers placed on bottles designated by ☐ Yes □ No client? 15. Shipment meets LvLI Sample Acceptance □No Policy? (Identify all bottles not within policy. See reverse side for policy) 16. Project Manager contacted concerning ☐ Yes □ No E No discrepancies? name/date (or samples Discrepancies

SR-002-B

outside criteria)



DATE RECEIVED: 12/15/03 LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B17RY5		•				
% SOLIDS % SOLIDS	001 001 REP	s S	03L%S192 03L%S192	12/05/03 12/05/03	12/15/03 12/15/03	12/16/03 12/16/03
B17RT3					· · · · · · · · ·	
% SOLIDS CHROMIUM VI CHROMIUM VI CHROMIUM VI CHROMIUM VI NITRATE NITRITE NITRATE NITRITE NITRATE NITRITE OIL & GREASE BY GRAV SULFIDE	002 002 002 REP 002 MS 002 MSD 002 002 REP 002 MS 002 002	9999999999	03L%S192 03LVI086 03LVI086 03LVI086 03LVI086 03LN3072 03LN3072 03LN3072 03LN3072	12/06/03 12/06/03 12/06/03 12/06/03 12/06/03 12/06/03 12/06/03 12/06/03 12/06/03	12/15/03 12/21/03 12/21/03 12/21/03 12/21/03 12/24/03 12/24/03 12/24/03 12/21/03 12/18/03	12/16/03 12/21/03 12/21/03 12/21/03 12/21/03 12/24/03 12/24/03 12/24/03 12/22/03 12/18/03
B17RT6		. :	· .	er e		
% SOLIDS CHROMIUM VI NITRATE NITRITE OIL & GREASE BY GRAV SULFIDE B17RT8	003 003 003 003 003	S S S S S	03L%S192 03LVI086 03LN3072 03LOG057 03LSD059	12/06/03 12/06/03 12/06/03 12/06/03 12/06/03	12/15/03 12/21/03 12/24/03 12/21/03 12/18/03	12/16/03 12/21/03 12/24/03 12/22/03 12/18/03
% SOLIDS CHLORIDE BY IC CHLORIDE BY IC CHLORIDE BY IC FLUORIDE BY IC FLUORIDE BY IC FLUORIDE BY IC NITRITE BY IC NITRITE BY IC	004 004 REP 004 MS 004 REP 004 MS 004 004 REP		03L%S192 04LCC004 04LCC004 04LCC004 04LCC004 04LCC004 04LCC004 04LCC004	12/07/03 12/07/03 12/07/03 12/07/03 12/07/03 12/07/03 12/07/03 12/07/03	12/15/03 01/13/04 01/13/04 01/13/04 01/13/04 01/13/04 01/13/04 01/13/04	12/16/03 01/13/04 01/13/04 01/13/04 01/13/04 01/13/04 01/13/04 01/13/04

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRITE BY IC	004 MS	- — s	04LCC004	12/07/03	01/13/04	01/13/04
NITRATE BY IC	004 MS 004	S	04LCC004	12/07/03	01/13/04	01/13/04
NITRATE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
NITRATE BY IC	004 MS	S	04LCC004	12/07/03	01/13/04	01/13/04
TOTAL CYANIDE	004	s	03LC1C6	12/07/03	12/18/03	12/18/03
TOTAL CYANIDE	004 REP	S	03LC1C6	12/07/03	12/18/03	12/18/03
TOTAL CYANIDE	004 MS	S	03LC1C6	12/07/03	12/18/03	12/18/03
PHOSPHATE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
PHOSPHATE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
PHOSPHATE BY IC	004 MS	s	04LCC004	12/07/03	01/13/04	01/13/04
SULFATE BY IC	004	S	04LCC004	12/07/03	01/13/04	01/13/04
SULFATE BY IC	004 REP	S	04LCC004	12/07/03	01/13/04	01/13/04
SULFATE BY IC	004 MS	S.	04LCC004	12/07/03	01/13/04	01/13/04
AMMONIA	004	S	04LAM001	12/07/03	01/02/04	01/02/04
AINOMMA	004 REP	S	04LAM001	12/07/03	01/02/04	01/02/04
AMMONIA	004 MS	S	04LAM001	12/07/03	01/02/04	01/02/04
PH	004	S	03LPH113	12/07/03	12/16/03	12/16/03
PH	004 REP	S	03LPH113	12/07/03	12/16/03	12/16/03
B17RV5					•	
						and the second second
% SOLIDS	005.	S	03L%S192	12/07/03	12/15/03	12/16/03
CHROMIUM VI	005	S	03LVI086	12/07/03	12/21/03	12/21/03
NITRATE NITRITE	005	S	03LN3072	12/07/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	005	S	03LOG057	12/07/03	12/21/03	12/22/03
SULFIDE	005	S	03LSD059	12/07/03	12/18/03	12/18/03
			-			* ***
B17RW4						
% SOLIDS	006	s	03L%S192	12/10/03	12/15/03	12/16/03
CHROMIUM VI	006	S	03LVI086	12/10/03	12/21/03	12/21/03
NITRATE NITRITE	006	S	03LN3072	12/10/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	006	S	03LOG057	12/10/03	12/21/03	12/22/03
SULFIDE	006	S	03LSD059	12/10/03	12/18/03	12/18/03
B17RV2				÷		
% SOLIDS	007	S	03L%S192	12/07/03	12/15/03	12/16/03

DATE RECEIVED: 12/15/03 LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
			<u>.</u>		•	
CHROMIUM VI	007	S	03LVI086	12/07/03	12/21/03	12/21/03
NITRATE NITRITE	007	S	03LN3072	12/07/03	12/24/03	12/24/03
OIL & GREASE BY GRAV	007	S	03LOG057	12/07/03	12/21/03	12/22/03
OIL AND GREASE BY GR	007 REP	S	03LOG057	12/07/03	12/21/03	12/22/03
OIL AND GREASE BY GR	007 MS	S	03LOG057	12/07/03	12/21/03	12/22/03
SULFIDE	007	S	03LSD059	12/07/03	12/18/03	12/18/03
SULFIDE	007 REP	S	03LSD059	12/07/03	12/18/03	12/18/03
SULFIDE	007 MS	S	03LSD059	12/07/03	12/18/03	12/18/03

LAB QC:

	CHROMIUM VI	MB1		s	03LVI086	N/A	12/21/03	12/21/03
	CHROMIUM VI	MB1 BS		S	03LVI086	N/A	12/21/03	12/21/03
	CHROMIUM VI	MB1 BSD		S	03LVI086	N/A	12/21/03	12/21/03
	NITRATE NITRITE	MB1		S	03LN3072	N/A	12/24/03	12/24/03
	NITRATE NITRITE	MB1 BS		S	03LN3072	N/A	12/24/03	12/24/03
	OIL & GREASE BY GRAV	MB1		S	03LOG057	N/A	12/21/03	12/22/03
	OIL AND GREASE BY GR	MB1 BS		S	03LOG057	N/A	12/21/03	12/22/03
	OIL AND GREASE BY GR	MB1 BSD		S	03LOG057	N/A	12/21/03	12/22/03
	SULFIDE	MB1		S	03LSD059	N/A	12/18/03	12/18/03
	SULFIDE	MB1 BS		S	03LSD059	N/A	12/18/03	12/18/03
	CHLORIDE BY IC	MB1		S	04LCC004	N/A	01/13/04	01/13/04
	CHLORIDE BY IC	MB1 BS		S	04LCC004	N/A	01/13/04	01/13/04
	FLUORIDE BY IC	MB1		S	04LCC004	N/A	01/13/04	01/13/04
	FLUORIDE BY IC	MB1 BS		S	04LCC004	N/A	01/13/04	01/13/04
٠	NITRITE BY IC	MB1		S	04LCC004	N/A	01/13/04	01/13/04
	NITRITE BY IC	MB1 BS	100	Ş	04LCC004	N/A	01/13/04	01/13/04
	NITRATE BY IC	MB1		S	04LCC004	N/A	01/13/04	01/13/04
	NITRATE BY IC	MB1 BS		S	04LCC004	N/A	01/13/04	01/13/04
	TOTAL CYANIDE	LCS L		S	03LC1C6	N/A	12/18/03	12/18/03
	TOTAL CYANIDE	LCS L		S	03LC1C6	N/A	12/18/03	12/18/03
	TOTAL CYANIDE	MB1		S	03LC1C6	N/A	12/18/03	12/18/03
	PHOSPHATE BY IC	MB1		S	04LCC004	N/A	01/13/04	01/13/04
	PHOSPHATE BY IC	MB1 BS	·-	S	04LCC004	N/A	01/13/04	01/13/04
	SULFATE BY IC	MB1		S	04LCC004	N/A	01/13/04	01/13/04
	SULFATE BY IC	MB1 BS		S	04LCC004	N/A	01/13/04	01/13/04
	AMMONIA	MB1	•	S	04LAM001	N/A	01/02/04	01/02/04
	AMMONIA	MB1 BS		S	04LAM001	N/A	01/02/04	01/02/04

-DATE RECEIVED: 12/15/03 EVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL #	MTX PREP	# COLLECTION	EXTR/PREP	ANALYSIS
AMMONIA	MB1 BSD	S 04LAMC	 01 N/A	01/02/04	01/02/04



#### Analytical Report

Client: TNU-HANFORD F03-025 H2461

**W.O.**#: 11343-606-001-9999-00

LVL#: 0312L369

Date Received: 12-15-03

#### INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 soil samples.

- 2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.
- 3. Sample holding times as required by the method and/or contract were met with the exception of Sulfide that were received past hold (excluding sample B17RW4 that was received within hold but analyzed past hold).
- 4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of Sulfide.
- 5. The method blanks were within the method criteria.
- 6. The Laboratory Control Samples (LCS) were within the laboratory control limits with the exception of 03LOG0157 for Oil and Grease that were below the 80-120% control limits at 78.8% and 79.0%. The duplicate LCS for Oil and Grease and Ammonia were within the 20% Relative Percent Difference (RPD) control limit.
- 7. The matrix spike (MS) recoveries for Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Phosphate, Sulfate, Ammonia and Sulfide were within the 75-125% control limits, however MS recovery for Oil and Grease was below the control limit that may be attributed to sample inhomogeneity.
- 8. The replicate analyses Percent Solids, Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Phosphate, Sulfate, Ammonia, pH, Oil and Grease and Sulfide were within the 20% RPD control limit.
- 9. Results for solid samples are reported on a dry weight basis.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

njp\i12-369

01-20-04 Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 22 pages.

## Lionville Laboratory Incorporated WET CHEMISTRY

### METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
07.4.1	D2216-80		
% Ash			II MO4 0 (a)
% Moisture	D2216-80		ILMO4.0 (e)
% Solids	√ D2216-80		_ ILMO4.0 (e)
% Volatile Solids	D2216-80		
ASTM Extraction in Water	D3987-81/85		
BTU	D240-87		
CEC			<u> </u>
Chromium VI		<u>√</u> 3060A/7196A	
Corrosivity by coupon by pH		$\frac{1110 \text{(mod)}}{} = \frac{9045 \text{C}}{}$	
Cyanide, Total		√9010B/9014	ILMO4.0 (e)
Cyanide, Reactive		Section 7.3/9014	
Halides, Extractable Organic		9020B	EPA 600/4/84-008
Halides, Total	- -	9020B	EPA 600/4/84-008
EP Toxicity		1310A	
Flash Point		1010	
Ignitability		1010	(1101/ /)
Oil & Grease		<u>√</u> 9071A	1413.1 (moel.)
Carbon, Total Organic		9060	Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	D240-87(mod)	5050	
Petroleum Hydrocarbons, Total Rec	coverable	9071	EPA 418.1
pH, Soil			
Sulfide, Reactive		Section 7.3/9030B	
Sulfide		√ 9030B(mod)	
Specific Gravity	D1429-76C/	D5057-90	
Sulfur, Total		9056	
Synthetic Preparation Leach		1312	
Paint Filter		9095A	
Other: Athati Mitrite	Method: E	PA353, 2(med)	
Other: annonia	Method E	TA 350.3 (Mod.)	
Chloride, Fluoride, 17 Vitrate, Phasphate	trite sulfate &	PA 300.0 (mod.)	

#### Lionville Laboratory Incorporated

#### METHOD REFERENCES AND DATA QUALIFIERS

#### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

#### **ABBREVIATIONS**

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

#### ANALYTICAL WET CHEMISTRY METHODS

- ASTM Standard Methods.
- 2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. <u>Method of Soil Analysis</u>, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

#### INORGANICS DATA SUMMARY REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0312L369

TOTAL GLOSS			•		REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
======	~~====================================	=======================================		=====		- ======
-001	B17RY5	% Solids	96.0	%	0.01	1.0
-002	B17RT3	% Solids	96.9	\$	0.01	1.0
-002	BI/RI3	Chromium VI	0.21 u	MG/KG	0.21	1.0
		Nitrate Nitrite	0.64	MG/KG	0.20	1.0
		Oil & Grease Gravimetri	. 688 u	MG/KG	688	1.0
		Sulfide	24.8 u	MG/KG	24.8	1.0
		Julii de	2110	1.0,1.0		;
-003	B17RT6	% Solids	96.7	*	0.01	1.0
		Chromium VI	0.21 u	MG/KG	0.21	1.0
•		Nitrate Nitrite	0.62	MG/KG	0.19	1.0
14 4		Oil & Grease Gravimetri	689 u	MG/KG	689	. 1.0
		Sulfide	. 29.0 u	MG/KG	29.0	1.0
	•		*			
-004	B17RT8	% Solids	96.0	ક	0.01	110
		Chloride by IC	1.3 u	MG/KG	1.3	1.0
		Fluoride by IC	1.3 u	MG/KG	1.3	1.0
		Nitrite by IC	1.30 u	MG/KG	1.30	1.0
		Nitrate by IC	3.57	MG/KG	1.30	1.0
		Cyanide, Total	0.34 u	MG/KG	0.34	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Sulfate by IC	19.7	MG/KG	1.3	1.0
		Ammonia, as N	2.4 u	MG/KG	2.4	1.0
		рн	8.7	SOIL PH	0.01	1.0
•					* .	4.*
-005	B17RV5	% Solids	94.1	ક	0.01	1.0
		Chromium VI	0.21 u	MG/KG	0.21	1.0
·		Nitrate Nitrite	2.5	MG/KG	0.19	1.0
		Oil & Grease Gravimetri	່ 709 ພ	MG/KG	709	1.0
		Sulfide	30.2 u	MG/KG	30.2	1.0
			•			•
-006	B17RW4	% Solids	97.4	8	0.01	1.0
		Chromium VI	0.20 u	MG/KG	0.20	1.0
		Nitrate Nitrite	1.6	MG/KG	0.18	1.0
	•	Oil & Grease Gravimetri		MG/KG	684	1.0
	A Commence of the Commence of	Sulfide	23.5 u	MG/KG	23.5	1.0
•		•				
-007	B17RV2	% Solids	95.9	ક	0.01	. 1.0
		Chromium VI		MG/KG	0.21	1.0
		Nitrate Nitrite	1.1	MG/KG	0.20	1.0

#### INORGANICS DATA SUMMARY REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

	. *					REPORTING	DILUTIO	JN
SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	LIMIT	FACTOR	
	=======================================		=======	==			=======	==
-007	B17RV2	Oil & Grease Gravimetri	695	u	MG/KG	695	1.	.0
		Sulfide	20.6	u	MG/KG	20.6	1	. 0

#### INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/14/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

~		· <del>-</del>				
WORK O	RDER: 11343-606-001-9999-	-00				
					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
		****************	****	=====	========	
. BLANK1	0 03LVI086-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK1	0 03LN3072-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
BLANK1	0 03L0G057-MB1	Oil & Grease Gravimetri	667 u	MG/KG	667	1.0
BLANK1	0 03LSD059-MB1	Sulfide	40.0 บ	MG/KG	40.0	1.0
BLANK1	0 04LCC004-MB1	Chloride by IC	1.2 u	MG/KG	1,2	1.0
		Fluoride by IC	1.2 u	MG/KG	1.2	1.0
		Nitrite by IC	1.25 u	MG/KG	1.25	1.0
		Nitrate by IC	1.25 u	MG/KG	1.25	1.0
		Phosphate by IC	1.2 u	MG/KG	1.2	1.0
		Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK1	03LC1C6-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK1	0 04LAM001-MB1	Ammonia, as N	5.0 u	MG/KG	5.0	1.0

#### INORGANICS ACCURACY REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0312L369

		1		SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID		ANALYTE	SAMPLE	RESULT	AMOUNT	%RECOV	FACTOR (SPK)
======		======		======	*=====		======	=========
-002	B17RT3		Soluble Chromium VI	3.6	0.21u	4.1	85.8	1.0
		٠.	Insoluble Chromium VI	1180	0.21u	1240	94.6	100
			Nitrate Nitrite	13.3	0.64	11.6	108.9	2.0
-004	B17RT8		Chloride by IC	28.8	1.2	26.0	106.2	1.0
•		,	Fluoride by IC	26.5	0.41	26.0	100.3	1.0
		4.	Nitrite by IC	26.3	1.30u	26.0	101.0	1.0
			Nitrate by IC	30.0	3.57	26.0	101.6	1.0
			Cyanide, Total	5.28	0.34u	5.52	95.6	1.0
•	÷		Phosphate by IC	26.2	1.3 u	26.0	100.6	1.0
		•	Sulfate by IC	47.6 -	19.7	26.0	107.6	1.0
			Ammonia, as N	100	2.4 u	103	97.2	1.0
~007	B17RV2		Oil & Grease Gravimetr	3940	695 ц	7080	55.7	1.0
		•	Sulfide	205	. 7.7	226	87.5	1.0
BLANK10	03LVI086-MB1		Soluble Chromium VI	4.0	0.20u	4.0	100.0	1.0
S			Insoluble Chromium VI	1310	0.20u	1250	105.2	100-
BLANK10	03LN3072-MB1		Nitrate Nitrite	5.1	0.201	5.0	102.2	1.0
BLANK10	03LOG057-MB1		Oil & Grease Gravimetr	5390	667 u	6840	78.8	1.0
			Oil & Grease - Grav M	5410	667 u	6840	79.0	1.0
BLANK10	03LSD059-MB1		Sulfide	343	40.0 u	399	85.9	1.0
BLANK10	04LCC004-MB1		Chloride by IC	23.8	1.2 u	25.0	95.0	1.0
•			Fluoride by IC	24.1	1.2 u	25.0	96.4	1.0
			Nitrite by IC	23.6	1.25u	25.0	94.2	1.0
			Nitrate by IC	25.1	1.25u	25.0	100.3	1.0
•			Phosphate by IC	23.3	1.2 u	25.0	93.3	1.0
	•		Sulfate by IC	24.2	1.2 u	25.0	96.9	1.0
BLANK10	04LAM001-MB1		Ammonia, as N	206	5.0 u	200	103.2	1.0
			Ammonia, as N MSD	199	5.0 u	200	99.5	1.0

#### INORGANICS DUPLICATE SPIKE REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

	•		SPIKE#1	SPIKE#2	2
SAMPLE	SITE ID	ANALYTE	%RECOV	%RECOV	%DIFF
*	=======================================		=====		
BLANK10	03LOG057-MB1	Oil & Grease - Grav	78.8	79.0	0.3
BLANK10	04LAM001-MB1	Ammonia, as N	103.2	99.5	3.7

#### INORGANICS PRECISION REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0312L369

,			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	RPD	FACTOR (REP)
	=======================================			.========		
-001REP	B17RY5	% Solids	96 0	96.1	0.010	1.0
-002REP	B17RT3	Chromium VI	0.21u	0.21u	NC	1.0
		Nitrate Nitrite	0.64	0.64	0.00	1.0
-004REP	B17RT8	Chloride by IC	. 1.3 u	1.3 u	NC	1.0
* *		Fluoride by IC	1.3 u	1.3 u	NC	1.0
		Nitrite by IC	1.30u	1.30u	NC	1.0
		Nitrate by IC	3.57	3.26	9.0	1.0
		Cyanide, Total	0.34u	0.63u	NC	1.0
		Phosphate by IC	1.3 u	. 1.3 u	NC	1.0
•		Sulfate by IC	19.7	18.8	4.6	1.0
		Ammonia, as N	2.4 u	2.6 u	NC	1.0
		рН	8.7	8,7	0.1	1.0
-007REP	B17RV2	Oil & Grease Gravimetri	695 u	695 u	NC	1.0
		Sulfide	20.6 u	21.5 u	NC	1.0

#### INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/14/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

		e e e	SPIKED	SPIKED		
SAMPLE	SITE ID	ANALYTE	SAMPLE	AMOUNT	UNITS	%RECOV
	=======================================	=======================================	======	=====	======	=====
LCSS1	03LC1C6-LCS1	Cyanide, Total LCS	1.92	2.0	MG/KG	95.8
LCSS2	03LC1C6-LCS2	Cyanide, Total LCS	9.88	10.0	MG/KG	98.8

(6) NOA BNA PIPCB From Litely DIG Nich Custody Transfer Record/Lab Work Request Page / of / Lionville Laboratory Use Only 03/21369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS DEF GHI Client TNU Hanford F03-025 Refrigerator # Est. Final Prof. Sampling Date Liquid #/Type Container Project # 11343 - 606. 001- 9999-07 AGI, AGI, AGI, BAGI, AGI, BET Solid. Project Contact/Phone # Liquid Volume Lionville Laboratory Project Manager O. John Son 60 60 120 120 40 250 500 Solid 250 ac SPEC Del 5-0 TAT 30 days Preservatives ORGANIC INORG **ANALYSES** Pest/ Date Rec'd 12/15/03 Date Due _____ 1-14-03 REQUESTED Lionville Laboratory Use Only MATRIX Matrix QC CODES: Date Time 244 Chosen Client ID/Description Matrix S - Soil Collected Collected (V) SE - Sediment SO - Solid MS MSD SL - Sludge W - Water 001 BITR45 12/5/03 1500 O - Oil : 12/6/03 1545 A - Air 002 BITRT3 DS - Drum 1545 Solids BITRIG DL - Drum 12/7/03/1030 Llauids BITRT8 EP/TCLP 1410 Leachate BITRUS WI - Wipe 12/10/03 1245 Other 006 BITRW4 F - Fish 12/7/03 1030 B17RV2 DATE/REVISIONS: Special Instructions: SAF = F03 -025 (7-19-0) 1. Add 08015 to -004 Lionville Laboratory Use Only Rum Matrix Q c MET 1. RCRA + Sb. Bo. Bi, Cu. Ni Samples were: Tamper Resistant Seal was: 1) Shipped ..... or 1) Present on Outer Hand Delivered _____ Package Y or N Airbill # _____ 2) Unbroken on Outer Package Y or N 10 0 = C1, E, NO, NOZ, PO4. SO4 2) Ambient or Chilled 3) Present on Sample Y or N 3) Received in Good Condition Y or M 4) Unbroken on 4) Samples

	Relinquished by	Received by	Date	Time
	Fedex	Therny	12/5/03	0950
Γ				

Marine bandward to the decomposition	6		<u></u>	
Relinquished by	Received by	Date	Time	
-"COMPOSITE	ORIG	NAL		
WASTE*	REWR	TTEN		

Discrepancies Between Samples Labels and COC Record? Y or N NOTES:

Properly Preserved or N

5) Received Within Holding Times Y or N Sample Y or N

**COC Record Present** Upon Sample Rec't Y or N

Cooler Temp. ____

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around	
ays	
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	·
	•
	i.
Matrix *	
S=Soit	
E=Sediment	
il≖Shulgo W = Waler	
SU-Strutge W = Water D=Oil A=Air DS=Drum Solids DL=Drum Liquids	
v = 1 issue V = Wipe _= Liquid √= Vegetation	
/≠Vegetation K≠Other	

FLUOR Hanfor	d Inc.	CEN	NTRAL PLATEAU (	E ANA	NALYSIS REQUEST F03-025-001				Page <u>1</u>	of <u>I</u>			
Collector POPE / PFIS	STER / Hugh	Compa TRE	iny Contact ENT, STEVE	Telepho 373-5				Project Coor TRENT, SJ	dinator	Price Code	8N		irnaround
Project Designation 200-LW-1/LW-2 Characteriz	zation - Soil		ing Location -B-58 (0.5 ft)		* :	·.		SAF No. F03-025		Air Quality		45	Days
Ice Chest No. ERC	02 501	, Field I	ogbook No.		COA 119143ES	310		Method of Sh FEDERAL	EXPRESS				
Shipped To 1970 10:29 - EBERLINE SERVICES (Fo	03 rmerly TMA) RCT	Offsite	Property No.	A04	005	-9		Bill of Ladin	g/Air Bill	No. 5E	= 05 p	<u> </u>	
POSSIBLE SAMPLE HAZA	ARDS/REMARKS		Preservation	Cool 4C	Cool 4C			÷					
Special Handling and/or 1	Storage		Type of Container	аG	aG								
** : ***** *****	otorngo		No. of Container(s)	1	1								
			Volume	60mL	60mL							,	
	SAMPLE ANAI	YSIS		Pesticides - 8081	Chloro- Herbicides - EPA8151								
Sample No.	Matrix *	Sample Date	Sample Time										
B17RY5	SOIL	12-5-3	15:00						77	ETO	B 171	Ry6	
							<u> </u>						
1.076				·									
					ļ								
CHAIN OF POSSESSIO		Sign/Print			SPE	CIAL INSTR	RUCTIO	NS					Matrix *
Relinquished By/Removed From  Relinquished By/Removed From	·(7) / //-c	Received By/Store Received By/Store	Fridge 81 12	-3-3	:00					÷	•		S≃Solt SE=Sediment SO=Solid St≃Shalge
MO-026 Fridge Relinquished By/Removed From Grey Thomas Aug A Relinquished By/Removed From SJGA(EAUA)	Date/Time 12/8/03 Date/Time 12/8/03 Date/Time 12/12-03	Received By/Stor	cornes Spay Thur ed In Di cod In Di cod In	m5 12/8 atc/Time (DS (2 atc/Time	<b>5/63</b> Per	sonnel not a clinquish sam f#/A on/3	ples fror	า 3728					W = Waler O=Oll A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W =Wipe L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time  Date/Time	Received By/Stor	ed in Di	ate/Time ate/Time				•					X≠Other
Relinquished By/Removed From	Date/Time	Received By/S109	ya m	ato/ 1 11116		-							
LABORATORY Received B SECTION	у .			Ti	tle da una	1 1				-	I	Date/Time	-
FINAL SAMPLE Disposal M DISPOSITION	lethod				17 ( ) 1 ( ) ( ) ( )	Dispo	osed By					Date/Time	
Give a			The second secon									<del></del>	

	d Inc.	CE	NTRAL PLATEAU (	CHAIN OF	CUSTO	Y/SAMPL	E ANA	LYSIS REQ	UEST	] F0	3-025-003	Page 1	of <u>I</u>
Collector +DD HE	Homes Hughes		any Contact ENT, STEVE	Telepho 373-5				Project Coor TRENT, SJ	linator	Price Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characteriza	ntion - Soil	Sampl 216	ing Location -B-58 (17.5 - 20 ft)					SAF No. F03-025		Air Qualit	<b>y</b> []	45	Days
Ice Chest No. ERC O	12-501	Field I	Logbook No.		COA 119143ES	310		Method of Sh FEDERAL		5			
Shipped To TWO 10 -2	9-19-13 Recra	Offsite	Property No. A	340	059			Bill of Ladin	g/Air Bill	[№] . SG	E OST	>	
POSSIBLE SAMPLE HAZAI			Preservation	Cool 4C	None								
8	:	-	Type of Container	G	G/P								
Special Handling and/or St	torage		No. of Container(s)	1	1								
			Volume	250mL	250 nL		,						
	SAMPLE ANALY:	SIS		See item (1) in Special Instructions.	See iten (2) in Special Instructions.								
	×		1		8/1/2								
Sample No.	Matrix *	Sample Date	Sample Time		1								
B17RT3	SOIL	12-6-3	15:45						T	776	= 70	1317	215
B17RT6	SOIL	12-6-	3 15:45							Til	70	3178	
1. 位					11 40								
					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								
CHAIN OF POSSESSION		Sign/Print			SPEC	IAL INSTR							Matrix *
CHAIN OF POSSESSION	Date/Time/800	Received By/Store	ed In Do	ate/Time	SPEC The l	aboratory is to a	analyze pl	I within 24 hours	of sample r	eccipt. The labor	atory is to report	kerosene	Matrix * S=Soil SE=Sediment
CHAIN OF POSSESSION Relinquished By/Removed From Cun H & Hell From	Date/Time/803	Received By/Store Received By/Store	ed In Da	6-3 /8 ate/Time /2	SPEC The l range	aboratory is to a organics from t Chromium Hex -	analyze pi the WTPF - 7196; No	I within 24 hours I-D analysis. See 02/NO3 - 353.2;	SAF COC	Comments for ho	lding time issues. e - 413.1		S=Soil
CHAIN OF POSSESSION Relinquished By/Removed From CUNN WARE DANGED Relinquished By/Removed From MO-026F11447 #	Date/Time /805 12-6-3 Date/Time /230 2 12/8/03	Received By/Store Processed By/Store Received By/Store Received They	ed In De De de In De Mas Miles Time	6-3 /8 ate/Time /2 <del>o</del> /2/8/	SPEC The 1 range 36 (1) (2)-15	aboratory is to a organics from t Chromium Hex - lickel-63, Gama	analyze pI the WTPI - 7196; No	I within 24 hours I-D analysis. See 02/NO3 - 353.2; 3 Redium (Radium	SAF COC Sulfides - 90 -226: Radio	Comments for ho 030; Oil & Grease m-228): Technol	lding time issues. e - 413.1 ham-99, Isotopia	Thoraga	S=Soil Sf!=Sediment SO=Solid SI=Studge W = Water O=Oil
CHAIN OF POSSESSION Relinquished By/Removed From Relinquished By/Removed From Mo-026F144 Relinquished By/Removed From	Date/Time /805    12-6-3   Date/Time   1230    2   12/8/03   Date/Time   245	Received By/Store  Received By/Store  Greg / Acre  Received By/Store	ed in De de din De	6-3 /8 ale/Time /2 5 /2/8/6 ate/Time	SPEC The l range 30 (1) (2) 1 (7) 17 (7)	aboratory is to a organics from t Chromium Hex - lickel-63, Gama	analyze pI the WTPI - 7196; No	I within 24 hours I-D analysis. See 02/NO3 - 353.2;	SAF COC Sulfides - 90 -226: Radio	Comments for ho 030; Oil & Grease m-228): Technol	lding time issues. e - 413.1	Thoraga	S=Soil SR=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Drum Solid
CHAIN OF POSSESSION Relinquished By/Removed From CUN H SUFFERM Relinquished By/Removed From Accompany of the Sufferm S	Date/Time /803 Date/Time /230 2 12/8/03 Date/Time /245 one 12/8/03 Date/Time	Received By/Store  Received By/Store  Gray There  Received By/Store  Received By/Store  Received By/Store	ed In Da  Todage H D  De  Mas String Through  Da  Da  Da  Da  Da  Da  Da  Da  Da  D	6-3 /8 ate/Time /2 <del>o</del> /2/8/	SPEC The l range 30 (1) (2) 1 (7) 17 (7)	aboratory is to a organics from t Chromium Hex - lickel-63, Gama	analyze pI the WTPI - 7196; No	I within 24 hours I-D analysis. See 02/NO3 - 353.2; 3 Redium (Radium	SAF COC Sulfides - 90 -226: Radio	Comments for ho 030; Oil & Grease m-228): Technol	lding time issues. e - 413.1 ham-99, Isotopia	Thoraga	S=Soil SE=Sediment SO=Sotid ST=Studge W = Water O=Oil A=Air DS=Drum Soild DL=Drum Liqui T=Tissue
CHAIN OF POSSESSION Relinquished By/Removed From Cuin N Sussession Relinquished By/Removed From Culinquished By/Removed From Grey Turnes Sussession Relinquished By/Removed From Colon Sussession	Date/Time /803 Date/Time /230 2 12/8/03 Date/Time /245 mo 12/9/03 Date/Time Z [2 05 1000	Received By/Store Gray There Received By/Store Gray There Received By/Store Received By/Store	ed In Da  To depth 1 Da  May Hung Thomas  Da  Da  Da  Da  Da  Da  Da  Da  Da	6-3 /8 ate/Time /2 5 /2/8/0 ate/Time 14/03 /2	30 (1) (2)-19 (7)-10 (45)	aboratory is to a organics from the chromium Hex - thekel-63, Gammann-232), Title erronnel not	analyze pi the WTPI - 7196; NO ma Spec- lum H3;	I within 24 hours I-D analysis. See 02/NO3 - 353.2; : Radium (Radium Carben-14; Stron	SAF COC Sulfides - 90 -226: Radio	Comments for ho 030; Oil & Grease m-228): Technol	lding time issues. e - 413.1 ham-99, Isotopia	Thoraga	S=Soil SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=A-Air DS=Drum Solid DL=Drum Liqui 7=Tissue W1=Wipe L=Liquid
CHAIN OF POSSESSION Relinquished By/Removed From CUN H SUFFERM Relinquished By/Removed From Accompany of the Sufferm S	Date/Time / 803 Date/Time / 245 Date/Time / 245 Date/Time  Z   2   6   5   5   5   5   Date/Time  Z   2   6   5   5   5   5   Date/Time	Received By/Store  Received By/Store  Gray There  Received By/Store  Received By/Store  Received By/Store	ed In Da  To depth 1 Da  May Hung Thomas  Da  Da  Da  Da  Da  Da  Da  Da  Da	6-3 /8 ate/Time /2 ate/Time 8/03 /2	30 (1) (2)-19 (7)-10 (45)	aboratory is to a organics from the chromium Hex - thekel-63, Gammann-232), Titule ersonnet not Relinquish sau	analyze pi the WTPI - 7196; NO ma Spec- lum - H3; avantable mples fro	I within 24 hours I-D analysis. See 22/NO3 - 353.2; ; Radium (Radium Carbon-14; Stron et to om 3728	SAF COC Sulfides - 90 -226: Radio	Comments for ho 030; Oil & Grease m-228): Technol	lding time issues. e - 413.1 ham-99, Isotopia	Thoraga	S=Soil SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Dram Solid DL=Drum Liqui T=Tissue Wi=Wipe
CHAIN OF POSSESSION Relinquished By/Removed From Cuin N Sussession Relinquished By/Removed From Culinquished By/Removed From Grey Turnes Sussession Relinquished By/Removed From Colon Sussession	Date/Time / 803  Date/Time / 245  Date/Time / 245  Date/Time  Date/Time  Z [ 2 0 5   1000   Date/Time	Received By/Store Gray There Received By/Store Gray There Received By/Store Received By/Store	ed In Da	6-3 /8 ate/Time /2 5 /2/8/0 ate/Time 14/03 /2	30 (1) (2)-19 (7)-10 (45)	aboratory is to a organics from the chromium Hex - thekel-63, Gammann-232), Title erronnel not	analyze pi the WTPI - 7196; NO ma Spec- lum - H3; avantable mples fro	I within 24 hours I-D analysis. See 22/NO3 - 353.2; ; Radium (Radium Carbon-14; Stron et to om 3728	SAF COC Sulfides - 90 -226: Radio	Comments for ho 030; Oil & Grease m-228): Technol	lding time issues. e - 413.1 ham-99, Isotopia	Thoraga	S=Soil SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Drant Solid T=Tissue W1=Wipe L=Liquid V=Vegetation
CHAIN OF POSSESSION Relinquished By/Removed From CUMAL SAFETY Relinquished By/Removed From Gray There's Relinquished By/Removed From Gray There's Relinquished By/Removed From CALE MAN	Date/Time /803 Date/Time /230 Z 12/8/03 Date/Time /245 Date/Time Z  Z 05  000 Date/Time S (03 )4550 Date/Time	Received By/Store Gray Theore Received By/Store Received By/Store Received By/Store Received By/Store Received By/Store Received By/Store	ed In Da	6-3 /8 ate/Time /2 ate/Time 12/8/ ate/Time ate/Time	30 (1) (2)-1 (7)-10 (45)	aboratory is to a organics from the chromium Hex - thekel-63, Gammann-232), Titule ersonnet not Relinquish sau	analyze pi the WTPI - 7196; No -	I within 24 hours I-D analysis. See 22/NO3 - 353.2; ; Radium (Radium Carbon-14; Stron et to om 3728	SAF COC Sulfides - 90 -226: Radio	Comments for ho 030; Oil & Grease m-228): Technol	lding time issues  e - 413.1  idin-99; Isotopic  O / 2/2/3	Thoraga	S=Soil SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Dram Solid T=Tissue WI=Wipe L=Liquid V=Vegetation

4. 44.						· ·						·
FLUOR Hanford Inc.	CE	ENTRAL PLATEAU (	CHAIN OF	CUSTOD	Y/SAMPL	E ANA	LYSIS REQU	EST	F03	-025-004	Page <u>I</u>	of <u>l</u>
Collector 4DP 4510/11/2016	US Comp	pany Contact RENT, STEVE	Telephor 373-50	ne No. 689			Project Coord TRENT, SJ	inator	Price Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil	Samp 21	pling Location 6-B-58 (22,5 - 25 ft)					SAF No. F03-025	Ā	Air Quality		45	Days
Ice Chest No. RRC 02 501	h	Logbook No.		COA 119143ES	10	- 1	Method of Ship FEDERAL E	XPRESS				
Shipped To TWD 10-78-03 -EDERCHNE SERVICES (Formerly TMA) PLC	Offsi	te Property No. AOY	0 05	9			Bill of Lading	/Air Bill N	S <i>ee</i>	780		
POSSIBLE SAMPLE HAZARDS/REMARKS	:	Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4		None	None			
Special Handling and/or Storage		Type of Container	aGs*	aG	G₅*	aG	G/P	G/P	G/P			
opecan manding and of ottorage		No. of Container(s)	3	1	3	1	ı	1	1 /			
		Volume	40mL	120mL	40mL	120m	L 250mL	500mL	500m.			
SAMPLE ANA	LYSIS		VOA - 8260A (TCL)	See item (1) in Special Instructions.	Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Ethylene	PCBs - 8	O82 See item (2) in Special Instructions.	See item (3) i Special Instructions	Special			
					glycol}				1 3 1/2 X			
Sample No. Matrix *	Sample Date	Sample Time				Ž.			1/ 3/2		1	100
B17RT8 SOIL	12-7-	3 10:30							/	TIGT	U B17	RVI
				3 4 5 5			_	<u> </u>				
				7,		rel	rsonnel not avai	from 3728				
				:		— Re	f# <u> /A</u> on <u>/Z</u> /	/ <u>12</u> /03.			*	
CHAIN OF POSSESSION	Sign/Prir				IAL INSTR							Matrix *
Relinquished By/Removed From Date/Time 133 Relinquished By/Removed From Date/Time 134 Relinquished By/Removed From Date/Time	Received By/Sto TMX/Nay    ()   Received By/Sto	red In Day Market Day	te/Time  ()3   4   2    te/Time  ()4   1   1    te/Time  tg/Time	730 (1) So Diesel kerose (2) IC ICP M 7471 (3) IC Cyanii	organics from t emi-VOA - 827 Range - WTPI ene range}; TPI P Metals - 601 letals - 6010A ( (CV)	the WTPH OA (TCL) H-D (Tota H-Gasolin IOA (Supe (Supertrac O (Chloric Soil) - 90	I within 24 hours of the property of the prope	SAF COC Co 7OA 8270/ carbons - diet Garium, Cadm nony, Berylliu e, Nitrite, Pho	mments for hold A (Add-On) {Tri sel range, Total   itum, Chromium, im, Bismuth, Co osphate, Sulfate}	ing time issues butyl phosphat petroleum hydr Lead, Seleniu pper, Nickel}; ; Ammonia - 3	e; TPH- ocarbons - m, Silver}; Mercury -	S=Soil SE=Scdiment SO=Solid SI=Sladge W = Waster O=Oil A=Air DS=Drum Solids DL=Drum Liquid: T=Tissue Wi-Wipe L=Liquid V=Vegetation X=Other
LABORATORY Received By SECTION Rel by: Field E	x 13/151	13 0950 R	ec by									
FINAL SAMPLE Disposal Method DISPOSITION			, , , , , , , , , , , , , , , , , , ,		Dispos	sed By					Date/Time	

FLUOR Hanford Inc.	CENT	RAL PLATEAU C	HAIN OF	CUSTOI	Y/SAMPL	E ANA	LYSIS REQU	EST	F0	3-025-005	Page <u>i</u>	of <u>l</u>
Collector DD PASK HUMS	<del></del>	, STEVE	Telephor 373-56	ie No. 589	,		Project Coord TRENT, SJ	inator	Price Code	8N		rnaroun
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling 216-B-	Location 58 (27.5 - 30 ft)	· -				SAF No. F03-025		Air Qualit	<b>y</b> 🗀	45	Days
Ice Chest No. EPC 02501	Field Log	gbook No.		COA 119143E	S10		Method of Shi FEDERAL E					
Shipped To TYYS 10-29 CO REPERTING SERVICES (Formerly TMA) RECO	Offsite P	roperty No.	2040	05	9		Bill of Lading	/Air Bill l	^{Vo.} 5€€	-057	<u>_</u>	
POSSIBLE SAMPLE HAZARDS/REMARKS	,	Preservation	Cool 4C	, None,								
Special Handling and/or Storage		Type of Container	G	G/P								
opecan xanding and/or Storage	1	No. of Container(s)	1	1								
		Volume	250mL	250 nL								
SAMPLE ANALYSIS			See item (1) in Special Instructions	See item (2) i Seccial Instructions	1							
				3,2				]     				
	nple Date	Sample Time			1	ille ge		19414				
B17RV5 SOIL 12	-7-3	14:10	X	<u> </u>				711	TO	BIZ	RUZ	
						ļ		ļ				ļ
				ļ ——	<u> </u>	ļ						<del> </del>
					-	<b> </b>		- <del> </del>			<u> </u>	<del> </del>
CHAIN OF POSSESSION	Sign/Print N	ames	<u> </u>	SPE	CIAL INSTE	L	NS					Matrix
Relinquished By/Removed Brom Date/Time 16:40 Reco	ived By/Stored のみら チハゼ	In Da Se#1 12-7	nte/Time 7-3/16:	40 The	laboratory is to e organics from	analyze pl the WTPI	H within 24 hours H-D analysis. See	SAF COC	Comments for he	olding time issu		S=Soll SE=Sedime SO≈Solid
MODEL Ref #1 12/8/03 G	reg Thur	nas Busthor	` ' '	12) color	Nickel 63; Gain	ina Spéc -	O2/NO3 - 353.2; S Radium (Radium Carbon-14; Stront	226, Radio	n-228), Tuchne	tium 99; Isoton		Sl=Sindge W = Water O=Oil A=Air
Grey Thomas Nes Homes 12/8/03	ived By/Stored	12/03/2 In Da		5						12/2	3	DS=Drain S DL=Drain I T=Tissue W!=Wipe
Relinquished By/Removed From Date/Time Rece	ED EX	·	ate/Time	     P	ersonnel not Relinquish sar	available	10 m 3728			. •		L=Liquid V=Vegetati X=Other
Relinquished By/Removed From Date/Time Reco	ived By/Stored	In Da	ate/Time	I	Reinquish sar Ref# <u>LA</u> on_I	2/12	103					
LABORATORY Received By SECTION	·		Tit	le							Date/Time	
FINAL SAMPLE Disposal Method					Diana	osed By	<del></del>		· · · · · · · · · · · · · · · · · · ·		Date/Time	

ELUOR Hanford Inc.	LA COMP	NTRAL PLATEAU C any Contact ENT, STEVE	Telephon 373-56	e No.	Y/SAMPLE	ANA	LYSIS REQUE Project Coordin TRENT, SJ	ator		-025-008 8N		rnaroua
oject Designation 200-LW-1/LW-2 Characterization - Soil		ling Location -B-58 (97.5 -100 ft)	*				SAF No. F03-025	. A	ir Quality		45	Days
Chest No. 612 601	Field	Loghnok No. 356 /		COA 119143ES	10		Method of Ships FEDERAL EX			-		
ipped To TWYS 10-19-03 VO K	Offsit	e Property No.	040	059			Bill of Lading/A	ir Bili No	" 5లొక	03P	<u>_</u>	
OSSIBLE SAMPLÉ HAZARDS/REMARKS		Preservation	Cool 4C	None								
Section 17 - 18 - 18 - 18 - 18 - 18 - 18 - 18 -		Type of Container	G	G/P				<del></del>				<del> </del>
pecial Handling and/or Storage		No. of Container(s)	1	1					-	<u> </u>	<del> </del>	-
		Volume	250mL	250mL		· .		<del></del> .				
SAMPLE AN	ALYSIS		See item (1) in Special Instructions.	See item (2) in Special Instructions.								
Sample No. Matrix *	Sample Date	Sample Time						100				
17RW4 SOIL	12-10-03	3 1245	X	/					TIE	70 B	17RU	16
								·				
										<u> </u>	<u> </u>	<u>  </u>
CHAIN OF POSSESSION	Sign/Prit	4 Names	<u></u>	Commi					<u> </u>	<u> </u>		<u> </u>
inquished By/Removed From Date/Time    Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Date/Time   Dat	Received By/Sto   red in 1 MO DU B		75 The 1 range (2) 1.3 (2) 1.4 (2) 1.5 (2) 1.6 (2) 1.6 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7 (2) 1.7	organics from the hromium Hex -	nalyze p he WTP 7196; N na Spec- um - H3 avanab noles fr	off within 24 hours of H-D analysis. See S. 102/NO3 - 353.2; Sul-Radium (Radium-2; Carbon-14; Strentium of the totom 3728	AF COC Co lfides - 9030 <del>26, Radium</del>	omments for holo O; Oil & Grease -228}, Techneti	ding time issue: - 413.1 - 413.1 - 413.1 - 113.1 - 113.1 - 113.1 - 113.1 - 113.1	s. <del>o Thorium</del>	Matri S=Soil SE=Sedil SO=Salid SO=Salid SO=Oil A=Air DS=Drai DL=Drai T=Tissue W=Wipb L=Liquid V=Voget X=Other	
ABORATORY Received By SECTION			Tit	le	· ·			·			Date/Time	
NAL SAMPLE Disposal Method					Dispos	ed By					Date/Time	

FLUOR Hanford Inc.	CENT	ΓRAL PLATEAU C	HAIN OF	CUST	CODY	Y/SAMPLE	ANA	LYS	SIS REQUI	EST	F03	-025-044	Page 1	of <u>1</u>
Collector 4000/14/5/0/45		y Contact IT, STEVE	Telepho: 373-5						ject Coordin ENT, SJ	ator P	rice Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Characterization - Soil		ng Location 3-58 (22.5 - 25 ft)			::			1	No. -025	· A	ir Quality		45	Days
Ice Chest No. ERC 02 501	Field Lo	ogbook No. HNF-N-351.o-	1 2 2	COA 11914		10		Met F	hod of Shipi EDERAL EX	nent (PRESS				
Shipped To TYON 0-28:03 EBERLINE SERVICES (Formerly FMA)	1	Duonautu No	240	05	59			Bill	of Lading/A	Air Bill No ろるで	0370	)# har		.*
POSSIBLE SAMPLE HAZARDS/REMARKS			Cool 4C	No	/						-			
		Preservation	G	G/	$\perp L$									
Special Handling and/or Storage	-	Type of Container	1	1	4									
	-	No. of Container(s)	250mL	2501					<i>'</i>			ļ	ļ	
		Volume								·	<u> </u>			
SAMPLE ANALYSIS			See item (1) in Special Instructions.	Spec	dial					•				
Sample No. Matrix * Sam	ple Date	Sample Time		<u>                                   </u>				is Servi						
	-7-S		X	1/		a de la companya de l La companya de la companya de					The	700 3	ノフペレ	
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			ļ	<u> </u>										
				-								<u> </u>		
CHAIN OF POSSESSION S	Sign/Print N	Names				LIAL INSTR				****	<u>'</u>	<del></del>		Matrix *
Relinquished By/Removed From Date/Time 16:00 Received A DATE D 235;	ed By/Stored	in Da	nte/Time 16								eipt. The labora numents for hol			S=Soil SE=SedIment
Relinquished By/Removed From Dater lime 1230 Receiv	ved By/Stored		ite/Time		(2)-N	liekal-62; Genr	nn-Suoo	Rad	uin (Radium-2	26, Radium	; Oil & Grease	- 413.1 um-99; Isotopi	• Thorium	SO=Sofid SI=Sludge W = Water O=Oil
Retinguished By/Rongoved From Date/Time Date/Time Received Property Date/Time	ved)By/Storcd	# 200-026 Da	ote/Time 03/45	30	Liior	ium-232); Trid	UIII <del>- 1</del> 3.2	<del>r, our</del> e	<del>) 08-14; 5110</del> 1111	nn-89,30	TOTAL PE	D 12/	2/3	A=Air DS=Dram Solids DL=Dram Liquids T=Tissac
Reinquished By/Removed From 24 Date/Time 1000 Received 11-03	ed Bylstored	hison and his	te/Time	13								. <del>-</del>		WI=Wipe L=Liquid V=Vegetation
	1 H	1012X	<del>)-11-0.</del>	3	Re	sonnel not a linquish samp # <u>Iff</u> on 13	ples fro	m 37	28		<i>.</i>			X=Other
2 JOHN S JAMES 12 12 03 1100 F	ved By/Stored → - 4/4 → D EX			<u> </u>	<u>-</u> - · <u>.</u>			·/_ <b>c</b> ·	<i>-</i>	,		·····		<u></u>
LABORATORY Received By SECTION Rel. by Fed & 13/	115/15	3 0950 Rec		itle	en	M						I	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION		And the second second				Dispos	sed By						Date/Time	

### Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD Date: Purchase Order / Project# / SAF#/SOW#/Release #: F03-025 LvLI Batch #: 03/21369 NOTE: EXPLAIN ALL DISCREPANCIES 7923 8938 8227 Airbill# Carrier Samples Hand Delivered or Shipped 2. Custody seals on coolers or shipping Comments □ No ☐ No Seals container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC - 02 - 501 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No ☐ No Seals signed and dated? coc signed and dated? □ No Sample containers are intact? □ No 9. All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? Ϋ́es Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No 14. QC stickers placed on bottles designated by □ Yes □ No client? 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) 16. Project Manager contacted concerning ☐ Yes □ No discrepancies? name/date (or samples Discrepancies outside criteria)



DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID /ANALYSIS	LVL	#	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
				<del></del>	<del></del>		
•							
B17RT8					•		
			٠.				( (
SILVER, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
SILVER, TOTAL		REP	S	04L0003	12/07/03	01/05/04	01/06/04
SILVER, TOTAL	004	MS	S	04L0003	12/07/03	01/05/04	01/06/04
ARSENIC, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
ARSENIC, TOTAL		REP	S	04L0003	12/07/03	01/05/04	01/06/04
ARSENIC, TOTAL	004	MS	S	04L0003	12/07/03	01/05/04	01/06/04
BARIUM, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
BARIUM, TOTAL	004	REP	S	04L0003	12/07/03	01/05/04	01/06/04
BARIUM, TOTAL	004	MS	S	04L0003	12/07/03	01/05/04	01/06/04
BERYLLIUM, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
BERYLLIUM, TOTAL	004	REP	s.	04L0003	12/07/03	01/05/04	01/06/04
BERYLLIUM, TOTAL	004	MS	·S	04L0003	12/07/03	01/05/04	01/06/04
BISMUTH, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
BISMUTH, TOTAL REP	004	REP	· s	04L0003	12/07/03	01/05/04	01/06/04
BISMUTH, TOTAL SPIKE	004	MS .	S	04L0003	12/07/03	01/05/04	01/06/04
CADMIUM, TOTAL	004	1	S	04L0003	12/07/03	01/05/04	01/06/04
CADMIUM, TOTAL		REP	S	04L0003	12/07/03	01/05/04	01/06/04
CADMIUM, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
CHROMIUM, TOTAL	004		S	0410003	12/07/03	01/05/04	01/06/04
CHROMIUM, TOTAL		REP	S	0410003	12/07/03	01/05/04	01/06/04
CHROMIUM, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
COPPER, TOTAL	004		Š	04L0003	12/07/03	01/05/04	01/06/04
COPPER, TOTAL		REP	ŝ	04L0003	12/07/03	01/05/04	01/06/04
COPPER, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
MERCURY, TOTAL	004		-S	03C0337	12/07/03	12/19/03	12/22/03
MERCURY, TOTAL		REP	S	03C0337	12/07/03	12/19/03	12/22/03
MERCURY, TOTAL	004		S	03C0337	12/07/03	12/19/03	12/22/03
	004	MO	S	03C0337	12/07/03	01/05/04	01/06/04
NICKEL, TOTAL		REP	S	04L0003	12/07/03	01/05/04	01/06/04
NICKEL, TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
NICKEL, TOTAL		MS				• •	01/06/04
LEAD, TOTAL	004	DD2	S	04L0003	12/07/03	01/05/04	
LEAD, TOTAL		REP	S	04L0003	12/07/03	01/05/04	01/06/04
LEAD, TOTAL		MS	S	04L0003	12/07/03	01/05/04	01/06/04
ANTIMONY, TOTAL	004			-04L0003	12/07/03	01/05/04	01/06/04
ANTIMONY, TOTAL	004	REP	S	04L0003	12/07/03	01/05/04	01/06/04

DATE RECEIVED: 12/15/03 LVL LOT # :0312L369

CLIENT ID	/ANALYSIS	LVL	#	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
			<u> </u>	<del></del>	<del></del>	- · · · · · · · · · · · · · · · · · · ·	-	
ANTIMONY,	TOTAL	004	MS	S	04L0003	12/07/03	01/05/04	01/06/04
SELENIUM,	TOTAL	004		S	04L0003	12/07/03	01/05/04	01/06/04
SELENIUM,	TOTAL	004	REP	S	04L0003	12/07/03	01/05/04	01/06/04
SELENIUM,	TOTAL	004	MS	S	04L0003	12/07/03	01/05/04	01/06/04

LAB QC:

					•		
SILVER LABORATORY	LC1 BS		S (	04L0003	N/A	01/05/04	01/06/04
SILVER, TOTAL	MB1	• •	S (	04L0003	N/A	01/05/04	01/06/04
ARSENIC LABORATORY	LC1 BS	•	S (	04L0003	N/A	01/05/04	01/06/04
ARSENIC, TOTAL	MB1	•	S	04L0003	N/A	01/05/04	01/06/04
BARIUM LABORATORY	LC1 BS		s (	04L0003	N/A	01/05/04	01/06/04
BARIUM, TOTAL	MB1		S (	04L0003	N/A	01/05/04	01/06/04
BERYLLIUM LABORATORY	LC1 BS		S	04L0003	N/A	01/05/04	01/06/04
BERYLLIUM, TOTAL	MB1		S	04L0003	N/A	01/05/04	01/06/04
BISMUTH, LCS	LC1 BS		S	04L0003	N/A	01/05/04	01/06/04
BISMUTH, TOTAL	MB1		S	0410003	N/A	01/05/04	01/06/04
CADMIUM LABORATORY	LC1 BS		S (	04L0003	N/A	01/05/04	01/06/04
CADMIUM, TOTAL	- MB1		S (	04L0003	N/A	01/05/04	01/06/04
CHROMIUM LABORATORY	LC1 BS		S	04L0003	N/A	01/05/04	01/06/04
CHROMIUM, TOTAL	MB1		S (	04L0003	N/A	01/05/04	01/06/04
COPPER LABORATORY	LC1 BS	*	S	04L0003	N/A	01/05/04	01/06/04
COPPER, TOTAL	MB1	. 7	S	04L0003	N/A	01/05/04	01/06/04
MERCURY LABORATORY	LC1 BS		S	03C0337	N/A	12/19/03	12/22/03
MERCURY, TOTAL	MBl		S	03C0337	N/A	12/19/03	12/22/03
NICKEL LABORATORY	LC1 BS	•	S	04L0003	N/A	01/05/04	01/06/04
NICKEL, TOTAL	MB1		S	04L0003	N/A	01/05/04	01/06/04
LEAD LABORATORY	LC1 BS		S	04L0003	N/A	01/05/04	01/06/04
LEAD, TOTAL	MB1		S (	04L0003	N/A	01/05/04	01/06/04
ANTIMONY LABORATORY	LC1 BS		S	04L0003	N/A	01/05/04	01/06/04
ANTIMONY, TOTAL	MB1			04L0003	N/A	01/05/04	01/06/04
SELENIUM LABORATORY	LC1 BS			04L0003	N/A	01/05/04	01/06/04
SELENIUM, TOTAL	MB1		S	04L0003	N/A	01/05/04	01/06/04



**Analytical Report** 

Client: TNU-HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00

Date Received: 12-15-03

#### METALS CASE NARRATIVE

1. This narrative covers the analyses of 1 soil sample.

- 2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.
- 3. All analyses were performed within the required holding times.
- 4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
- 6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
- 7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
- 8. All ICP Interference Check Standards were within control limits.
- 9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
- 10. The matrix spike (MS) recoveries for 3 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.
- 11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

		<u>PDS</u>	<u>PDS</u>
Sample ID	<u>Element</u>	Concentration (ppb)	% Recovery
B17RT8	Chromium	200	104.3
	Lead	2200	101.0
	Antimony	100	99.3

- 12. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
- 13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
- 14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

jjw/m12-369

01-14-04

Date



## METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 0317649

Metals   Digestion and   Analysis Methods:   ILM03.0   ILM04.0		dure:13101311		402 0 TI MO4	•	
Metals Analysis Methods	. —					
Netals Analysis Methods	Metals Digestio	n Methods:3005A _	3010A3015	3020A <u>⊀</u> 3050B	3051 _	_200.7SS17
SW846   EPA   STD MTD   OSWR   USATHAMA		Other:_				
SW846   EPA   STD MTD   OSWR   USATHAMA				AT 48 Y		
Aluminum         6010B         200.7         STD MTD         OSWR         USATHAMA           Antimony         ★ 6010B         7041°         200.7         204.2         _99           Arsenic         ★ 6010B         7060A °         200.7         206.2         _3113B         _99           Barium         ★ 6010B         200.7         206.2         _3113B         _99           Beryllium         ★ 6010B         200.7		1\	Aletais Analysis N	lethods	<b>775.</b>	
Aluminum 6010B 200.7 204.2 99 Arsenic ←6010B 7060A 200.7 206.2 3113B 99 Barium ←6010B 200.7 206.2 3113B 99 Beryllium ←6010B 200.7 206.2 3113B 99 Beryllium ←6010B 200.7 99 Boron 6010B 200.7 213.2 99 Cadmium ←6010B 7131A 200.7 213.2 99 Calcium 6010B 7191 200.7 218.2 SS17 Cobalt 6010B 7211 200.7 218.2 SS17 Cobalt 6010B 7211 200.7 220.2 99 Iron 6010B 7211 200.7 220.2 99 Iron 6010B 7421 200.7 239.2 3113B 99 Lead ←6010B 7430 200.7 239.2 3113B 99 Lead ←6010B 7430 200.7 200.7 200.7 99 Magnesium 6010B 200.7 99 Magnesium 6010B 200.7 99 Marcury 7470A ★7471A 245.1 245.5 245.5 99 Molybdenum 6010B 200.7 99 Molybdenum 6010B 200.7 99 Nickel ←6010B 7610 200.7 99 Nickel ★6010B 7610 200.7 258.1 99 Potassium 6010B 7610 200.7 99 Selenium ←6010B 7610 200.7 99 Selenium ←6010B 7610 200.7 1620 99 Silicon 6010B 7610 200.7 1620 99 Silicon 6010B 7610 200.7 1620 99 Solium ←6010B 7610 200.7 270.2 3113B 99 Silicon 6010B 7610 200.7 1620 99 Solium ←6010B 7610 200.7 270.2 3113B 99 Silicon 6010B 7610 200.7 270.2 3113B 99 Silicon 6010B 7700 200.7 99 Silicon 60				· .		TICLA TOTAL A TATA
Antimony				STD MTD	OSWR	
Arsenic						
Barium	•	<del></del>				<del></del>
Bartulium		. <del></del>		3113B		<del></del>
Bismuth			· —			
Boron 6010B 200.7 213.2 99 Calcium 6010B 7131A 5 200.7 213.2 99 Chromium €6010B 7191 200.7 218.2 SS17 Cobalt 6010B 7211 3 200.7 218.2 SS17 Cobalt 6010B 7211 5 200.7 220.2 99 Iron 6010B 7421 5 200.7 239.2 3113B 99 Lithium 6010B 7430 200.7 99 Lithium 6010B 7430 200.7 99 Magnesium 6010B 200.7 99 Manganese 6010B 200.7 99 Mercury 7470A 3 ₹ 7471A 3 245.1 2 245.5 2 99 Molybdenum 6010B 200.7 99 Nickel \$6010B 7610 200.7 99 Nickel \$6010B 7610 200.7 99 Potassium 6010B 200.7 99 Selenium \$6010B 7610 200.7 258.1 99 Selenium \$6010B 7610 200.7 270.2 3113B 99 Silicon 6010B 7740 5 200.7 270.2 3113B 99 Silica 6010B 7761 5 200.7 270.2 3113B 99 Silica 6010B 7770 4 200.7 273.1 99 Strontium 6010B 7700 7 270.7 273.1 99 Strontium 6010B 200.7 99 Thallium 6010B 200.7 99 Thallium 6010B 200.7 99 Titanium 6010B 200.7 99	•		<b>—</b>		4.600	
Cadmium			<del></del>		1620	
Calcium       6010B       200.7       299         Chromium       16010B       200.7       218.2       SS17         Cobalt       6010B       200.7       220.2       99         Copper       6610B       7211 3       200.7       220.2       99         Iron       6010B       200.7       239.2       3113B       99         Lead       16010B       7421 2       200.7       239.2       3113B       99         Lithium       6010B       7430 200.7       1620       99         Magnesium       6010B       200.7       99       99         Marganese       6010B       200.7       99       99         Molybdenum       6010B       200.7       99         Nickel       1620       99       99         Potassium       6010B       7610 200.7       258.1 4       99         Rare Earths       6010B       7610 200.7       270.2       3113B       99         Silican       6010B 7740 200.7       270.2       3113B       99         Silica       6010B 7740 200.7       270.2       3113B       99         Silver       1620       99       99       99		<del></del>				<del></del>
Chromium         \$\begin{array}{c} 6010B \ \ 010B \ \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ \ 200.7 \ 200.7 \ \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 200.7 \ 2				· .		· ——
Cobalt         6010B         200.7         299           Copper         ∠6010B         7211 s         200.7         220.2         99           Iron         6010B         200.7         239.2         3113B         99           Lead         ∠6010B         7421 s         200.7         239.2         3113B         99           Lithium         6010B         7430 s         200.7         1620         99           Magnesium         6010B         200.7         99         99           Manganese         6010B         200.7         99           Mercury         7470A s ∠7471A s         245.1 c         245.5 c         99           Molybdenum         6010B         200.7         99         99           Nickel         ∠6010B         200.7         258.1 s         99           Potassium         6010B 7610 s         200.7         258.1 s         99           Selenium         ∠6010B 7740 s         200.7 d         270.2 d         3113B         99           Silicon         6010B 7740 s         200.7 d         270.2 d         3113B         99           Silicon         6010B 200.7 d         200.7 d         1620 99         99			<del></del>		•	<del></del>
Copper         №6010B         7211 °         200.7         220.2		<del></del>		e Maria de la companya br>Maria de la companya		_ <del></del>
Iron       6010B       200.7       299         Lead $\checkmark$ 6010B       7421 5       200.7       239.2       3113B       99         Lithium       6010B       7430 4       200.7       1620       99         Magnesium       6010B       200.7       99         Manganese       6010B       200.7       99         Mercury       7470A 3 3 4 7471A 3 245.1 2 245.5 2 99         Molybdenum       6010B       200.7       99         Nickel 4 6610B       200.7       99         Potassium       6010B 7610 4 200.7       258.1 4 99         Rare Earths       6010B 7610 4 200.7 270.2 3113B       99         Selenium $\checkmark$ 6010B 7740 5 200.7 270.2 3113B       99         Silica       6010B 200.7       1620 99         Silica       6010B 200.7       1620 99         Sodium       6010B 7761 5 200.7 272.2       99         Sodium       6010B 7770 4 200.7 273.1 4 99       99         Strontium       6010B 200.7 279.2 200.9       99         Tianium       6010B 200.7 99       99         Uranium       6010B 200.7 99       99         Vanadium		<del></del>	<del></del>			· -
Lead			· · · · · · · · · · · · · · · · · · ·	·		<del></del>
Lithium       6010B       7430 ⁴       200.7	Iron		<del></del> . ·		2	
Magnesium       6010B       200.7       99         Manganese       6010B       200.7       99         Mercury       7470A ³ ½ 7471A ³       245.1 ² 245.5 ²       99         Molybdenum       6010B       200.7       99         Nickel       ∑6010B       200.7       99         Potassium       6010B 7610 ⁴       200.7 258.1 ⁴       99         Rare Earths       6010B 7740 ⁵       200.7 270.2 3113B       99         Selenium       ∮ 6010B 7740 ⁵       200.7 270.2 3113B       99         Silica       6010B 200.7       1620 99         Silica       6010B 200.7       1620 99         Sodium       6010B 7761 ⁵       200.7 272.2       99         Sodium       6010B 7770 ⁴       200.7 273.1 ⁴       99         Strontium       6010B 7841 ⁵       200.7 279.2 200.9       99         Tin       6010B 200.7       99         Titanium       6010B 200.7       99         Uranium       6010B 200.7       99         Vanadium       6010B 200.7       99         Zinc       6010B 200.7       99	the state of the s	<del></del>		3113B		
Marganese       6010B       200.7       _99         Mercury       7470A ³ √7471A ³       245.1 ² _ 245.5 ²       _99         Molybdenum       6010B       200.7       _99         Nickel       ∠6010B       200.7       _99         Potassium       6010B _ 7610 ⁴ _ 200.7 _ 258.1 ⁴       _99         Rare Earths       6010B _ 7740 ⁵ _ 200.7 _ 270.2 _ 3113B       _99         Selenium       ∠6010B _ 7740 ⁵ _ 200.7 _ 270.2 _ 3113B       _99         Silica       6010B _ 200.7 _ 200.7 _ 270.2 _ 3113B       _99         Silica       6010B _ 7761 ⁵ _ 200.7 _ 272.2 _ 312       _99         Sodium       6010B _ 7761 ⁵ _ 200.7 _ 272.2 _ 200.9       _99         Strontium       6010B _ 7770 ⁴ _ 200.7 _ 279.2 _ 200.9       _99         Thallium       6010B _ 7841 ⁵ _ 200.7 _ 279.2 _ 200.9       _99         Titanium       6010B _ 200.7 _ 200.7 _ 279.2 _ 200.9       _99         Uranium       6010B _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7 _ 200.7	Lithium	6010B7430 ⁴	<del></del>		1620	
Mercury       7470A ³ ★7471A ³ 245.1 ² _ 245.5 ² 99         Molybdenum       6010B       200.7       99         Nickel       ★6010B       200.7       99         Potassium       6010B _ 7610 ⁴ _ 200.7 _ 258.1 ⁴ 99         Rare Earths       6010B _ 7740 ⁵ _ 200.7 _ 270.2 _ 3113B       99         Selenium       ★6010B _ 7740 ⁵ _ 200.7 _ 270.2 _ 3113B       99         Silicon       6010B _ 200.7 _ 200.7 _ 270.2 _ 3113B       1620 _ 99         Silica       6010B _ 200.7 _ 200.7 _ 272.2 _ 200.9       99         Sodium       6010B _ 7761 ⁵ _ 200.7 _ 272.2 _ 200.9       99         Strontium       6010B _ 200.7 _ 200.7 _ 279.2 _ 200.9       99         Tin       6010B _ 200.7 _ 200.7 _ 279.2 _ 200.9       99         Titanium       6010B _ 200.7 _ 200.7 _ 200.7 _ 200.9       99         Uranium       6010B _ 200.7 _ 200.7 _ 200.7 _ 200.9       99         Vanadium       6010B _ 200.7 _ 200.7 _ 200.7 _ 200.9       99         Zinc       6010B _ 200.7 _ 200.7 _ 200.7 _ 200.9       99	Magnesium	6010B				<del></del>
Molybdenum       6010B       200.7       99         Nickel       ∠6010B       200.7       99         Potassium       6010B       7610⁴       200.7       258.1⁴       99         Rare Earths       6010B¹       200.7¹       1620       99         Selenium       ∠6010B 7740⁵       200.7 270.2 3113B       99         Silicon       6010B¹       200.7 200.7 270.2 3113B       99         Silica       6010B       200.7 200.7 272.2       99         Silver       √6010B 7761⁵       200.7 272.2       99         Sodium       6010B 7770⁴       200.7 273.1⁴       99         Strontium       6010B 200.7       99         Tin       6010B 7841⁵       200.7 279.2 200.9       99         Titanium       6010B 200.7       99         Uranium       6010B 200.7       99         Vanadium       6010B 200.7       99         Zinc       6010B 200.7       99	Manganese	<del></del>				-
Nickel	Mercury	7470A ³ <u>~</u> 7471A		2		
Potassium       6010B       7610 ⁴       200.7       258.1 ⁴       99         Rare Earths       6010B ¹       200.7 ¹       1620       99         Selenium       ★6010B 7740 ⁵       200.7 270.2 3113B       99         Silicon       6010B ¹       200.7 270.2 3113B       99         Silica       6010B 200.7 200.7 272.2       99         Silver       ★6010B 7761 ⁵       200.7 272.2       99         Sodium       6010B 7770 ⁴       200.7 273.1 ⁴       99         Strontium       6010B 200.7       99         Thallium       6010B 200.7 279.2 200.9       99         Titanium       6010B 200.7       99         Uranium       6010B 200.7 200.7 200.7       99         Vanadium       6010B 200.7 200.7 200.7       99         Zinc       6010B 200.7       99         Zinc       6010B 200.7       99	Molybdenum	6010B	200.7	•		
Rare Earths $6010B^{+}$ $200.7^{+}$ $1620$ $99$ Selenium $46010B^{-}$ $200.7^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$ $270.2^{-}$	Nickel	<b>∑</b> 6010 <b>B</b>				·
Selenium          \( \frac{6}{0}10\text{B} \)	Potassium	6010B7610 ⁴	200.7258.1	4	•	, <del></del>
Silicon       6010B¹       200.7       1620       99         Silica       6010B       200.7       1620       99         Silver       √6010B       7761 ⁵       200.7       272.2       99         Sodium       6010B       7770 ⁴       200.7       273.1 ⁴       99         Strontium       6010B       200.7       99         Thallium       6010B       200.7       279.2 200.9       99         Tin       6010B       200.7       99         Uranium       6010B       200.7       99         Vanadium       6010B       200.7       1620       99         Vanadium       6010B       200.7       99         Zinc       6010B       200.7       99	Rare Earths	6010B ¹	200.7 1		1620	
Silica       6010B       200.7       1620       99         Silver	Selenium	<b>£6010B _7740</b> ⁵	200.7270.2	3113B		
Silver       \$\sqrt{6010B}\$ _ 7761 \$ \$ _ 200.7 _ 272.2 \$ _ 99\$         Sodium       6010B _ 7770 \$   200.7 _ 273.1 \$   99\$         Strontium       6010B _ 7841 \$   200.7 _ 279.2 _ 200.9 \$   99\$         Tin       6010B _ 200.7 _ 200.7   99\$         Titanium       6010B _ 200.7   99\$         Uranium       6010B   200.7   _ 1620   99\$         Vanadium       6010B   200.7   _ 99\$         Zinc       6010B   200.7   _ 99\$	Silicon	6010B ¹	200.7		<del></del>	<del></del>
Sodium	Silica	6010B	200.7		1620	
Strontium	Silver	<u>√</u> 6010B7761 ⁵	200.7272.2			<del></del>
Thallium     6010B     7841 5     200.7     279.2     200.9	Sodium	6010B7770 ⁴	200.7273.1	4		
Tin     _6010B     _200.7     _99       Titanium     _6010B     _200.7     _99       Uranium     _6010B     _200.7     _1620     _99       Vanadium     _6010B     _200.7     _99       Zinc     _6010B     _200.7     _99	Strontium	6010B	200.7		•	<del></del>
Titanium	Thallium	6010B7841 ⁵	200.7279.2	200.9		<del></del>
Uranium	Tin	6010B	200.7			<del></del>
Vanadium	Titanium	6010B	200.7			
Vanadium       _6010B       _200.7       _99         Zinc       _6010B       _200.7       _99	Uranium	6010B ^t	200.7 1		1620	· — ·
Zinc6010B200.799	Vanadium		200.7	•		<del></del>
Zirconium 6010B · 200.7 ·	Zinc	<del></del> .	200.7			·
<del></del>	Zirconium	6010B ¹	200.7 ¹	•	_1620	99

Method:

Other:

L-WI-033/M-03/01

## METHOD REFERENCES AND DATA QUALIFIERS

### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

### **ABBREVIATIONS**

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

#### ANALYTICAL METAL METHODS

- 1. Not included in the method element list.
- 2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the auto-sampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-auto-mated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
- 3. Flame AA.
- 4. Graphite Furnace AA.

L-WI-033/N-04/98

#### INORGANICS DATA SUMMARY REPORT 01/12/04

LVL LOT #: 0312L369

·					
WORK ORD	ER:	11343-	606-0	001-9	999-00

					REFORTING	DIHO	TTOM	
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACT	OR	
======	=======================================			======		====	====	
-004	B17RT8	Silver, Total	0.08	MG/KG	0.06		1.0	
		Arsenic, Total	3.3	MG/KG	0.29		1.0	
		Barium, Total	100	MG/KG	0.02		1.0	
		Beryllium, Total	0.50	MG/KG	0.01		1.0	
		Bismuth, Total	0.32 u	MG/KG	0.32		1.0	
	4	Cadmium, Total	0.17	MG/KG	0.03		1.0	
		Chromium, Total	9.4	MG/KG	0.07		1.0	
		Copper, Total	14.4	MG/KG	0.1		1.0	
100		Mercury, Total	0.01 u	MG/KG	0.01		1.0	
		Nickel, Total	 8.3	MG/KG	0.16		1.0	
		Lead, Total	12.5	MG/KG	0.29		1.0	
	•	Antimony, Total	 0.27 u	MG/KG	0.27		1.0	
		Selenium, Total	0.32 u	MG/KG	0.32		1.0	

#### INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/12/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

•			•	·	KEPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
======		=======================================	=======		=======	=======
BLANKI	04L0003-MB1	Silver, Total	0.06 u	MG/KG	0.06	1.0
		Arsenic, Total	0.29 u	MG/KG	0.29	1.0
		Barium, Total	0.02	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Bismuth, Total	0.32 u	mg/kg	0.32	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
-		Chromium, Total	0.15	MG/KG	0.07	1.0
		Copper, Total	0.10 u	MG/KG	0.10	1.0
	•	Nickel, Total	0.16 u	MG/KG	0.16	1.0
		Lead, Total	0.29 u	MG/KG	0.29	1.0
		Antimony, Total	0.27 u	MG/KG	0.27	1.0
		Selenium, Total	0.32 u	MG/KG	0.32	1.0
BLANK1	03C0337-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

#### INORGANICS ACCURACY REPORT 01/12/04

CLIENT: TNUHANFORD F03-025 H2461 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0312L369

			SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT %RE	COV	FACTOR(SPK)
======							_=========
-004	B17RT8	Silver, Total	4.8	0.08	5.1	92.5	1.0
	•	Arsenic, Total	187	3.3	202	90.9	1.0
		Barium, Total	271	100	202	34.6	1.0
	•	Beryllium, Total	5.1	0.50	5.1	90.1	1.0
		Bismuth, Total	469	0.32u	506	92.7	1.0
		Cadmium, Total	4.8	0.17	5.1	90.7	1.0
	•	Chromium, Total	37.4	9.4	20.2 1	38.6	1.0
		Copper, Total	40.9	14.4	25.3 1	04.7	1.0
		Mercury, Total	0.14	0.01u	0.14 1	02.1	1.0
		Nickel, Total	54.5	8.3	50.6	91.3	1.0
		Lead, Total	84.5	12.5	50.6 1	42.3	1.0
		Antimony, Total	. 29.0	0.27u	50.6	57.3	1.0
		Selenium, Total	176	0.32u	202	87.0	1.0

#### INORGANICS PRECISION REPORT 01/12/04

CLIENT: TNUHANFORD F03-025 H2461

LVL LOT #: 0312L369

WORK ORDER: 11343-606-001-9999-00

			INITIAL				DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	RPD .		FACTOR (REP)
======	=======================================						
-004REP	B17RT8	Silver, Total	0.08	0.09	6.4	٠.	1.0
		Arsenic, Total	3.3	3.0	9.5		1.0
٠.		Barium, Total	100	79.4	23.0		1.0
		Beryllium, Total	0.50	0.54	6.2		1.0
		Bismuth, Total	0.32u	0.33u	NC		1.0
		Cadmium, Total	0.17	0.09	62.1	• •	1.0
	et e	Chromium, Total	9.4	15.5	49.0		1.0
		Copper, Total	14.4	14.3	0.70		1.0
	, e	Mercury, Total	0.01u	0.01u	NC		1.0
* *		Nickel, Total	8.3	8.5	2.4		1.1.0.0
		Lead, Total	12.5	35.5	95.8		1.0
		Antimony, Total	0.274	0.28u	NC		1.0
	• • •	Selenium. Total	0.32u	0.33u	NC		1.0

#### INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/12/04

CLIENT: TNUHANFORD F03-025 H2461 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0312L369

				SPIKED	SPIKED		
SAMPLE	SITE ID		ANALYTE	SAMPLE	TYUOMA	UNITS	%RECOV
		======	======================================		======		=====
LCS1	04L0003+LC1		Silver, LCS	48.4	50.0	MG/KG	96.8
•		4	Arsenic, LCS	. 930	1000	MG/KG	93.0
			Barium, LCS	484	500	MG/KG	96.8
			Beryllium, LCS	23.5	25.0	MG/KG	94.0
			Bismuth, LCS	477	500	MG/KG	95.5
	-		Cadmium, LCS	24.0	25.0	MG/KG	. 96.0
			Chromium, LCS	49.1	50.0	MG/KG	98.2
			Copper, LCS	121	125	MG/KG	97.1
* * *.			Nickel, LCS	192	200	MG/KG	95.9
			Lead, LCS	240	250	MG/KG	96.1
			Antimony, LCS	285	300	MG/KG	95.0
			Selenium, LCS	906	1000	MG/KG	90.6
LCS1	03C0337-LC1		Mercury, LCS	6.0	6.2	MG/KG	96.8

Lionville Labora	atory (	Jse Only Cu	stody Tr	ans	efe:	<i>b</i> r <b>R</b>	KO A	BNA ord/L	epec ab \	₃ <i>ϵ</i> <b>No</b>	ran rk	사 Re	<b>dn</b> ๆง	os.	t Pa	N.J.								
03121	36	i i						ETE ONL	Y SHAD	ED A	,			) F	•	เสมี		<u>.</u>			uo	ONVILLE LAI	ORATOR	Y INC.
an TAL	1 Lh	nford Fo	2-025	ě.	i artini.		Refrige	erator #		ABC 1		16	6	6	6	<u> </u>	6	6	· · ·		6	.a		7.7
Est. Final Pro				2007 T	. Net at	_			Ligeid			V			· •		<b>—</b>				79			
		(343 - 606 - 6	01. 9999-00				#/Type	Container	37.77.3	BASE		AGI	AGO	AGL	Acc	3AGI	ACL	Str.	477	1-1-1 ⁻¹ -1-1	an		14,77	- Sec - 10
Project Conta				100	. 4				Liquid				, company	100	11.00	100		V	1					
Lionville Labo	ratory	Project Manager	O. Johns	son			Volum	10	Solid	40		60	40	120	120	40	250	500		j M	250	-1,		
ac SPEC		Del5-70	тат <u>30 da</u>	43			Prese	rvatives					10			11			9 -	. (	(app) (i la Mise <del>ri</del> i	3		ha ny taon
Date Rec'd				4-03			ANAL	YSES ESTED	-	VOA	ORC AN MB	ANIC As de	Herb	POBS	that that	Lashots Lyberts	Metal	DRG Z	Amina		1.76 182 (183	Suffer District		
MATRIX	Ė	·			Mat	rix	: .				<u> </u>		1		Lionv	ille La	¥	ory Us	se Onl		1	10000		
CODES: S- Soil SE - Sediment SO - Soild	Lab ID	Client I	D/Description		Choi (V	sen )	Matrix	Date Collected	Time Collected	74790		0608 H	OHOG×	орсв	0625 X	18415 06 CS C	METO	ZCU10	TAN TO H		ICR6	ISFD IOGGR	* ·	
SL - Sludge W - Water	001	B17R45			MS	Man	S	12/5/03	1500			1	1		133		-	,	178					
O Oil A - Air	002	BITRI3					١	12/6/03		1		1					1	1			1	1		7.7
DS - Drum Solids	003	BITRIG						1.L	1545	1		1-					1				1	1		
DL - Drum Liquids	004				in the sale of the	لستت	<del>-  -</del>	12/7/03	1	13		<b>-</b>		17	1	3	1	17	1					
L - EP/TCLP Leachate	005								1410	1					1			1			1	1		
WI - Wipe X - Other	006	BITRV5						12/10/02								1					200	1		
F - Fish	007							mpin and an artist of the same	1030				7 .57								1	1	5.30 (0.5)	
	001	161/2VZ							1.00															
	<del> </del>																							
	-						1		*		-			1		<u> </u>					Sty.			
Special Instruc	l	SAF # F	02-025		<u> </u>		/REVIS	IONS:			<del></del>			<u></u>			<del>-        </del>		Lionv	lile Lai	borator	y Use C	)nly	
	Ru	m Matrix a A + Sb. Be, Bi, F, NO, NOz, Pl	رد			-5,	19-01	1. Ac 2	14 0	8015	to	- 00						1) Shipp Hand D Airbill # 2) Ambi 3) Rece	lelivered	Chilled Good	1 F	amper Res ) Preser Package 2) Unbrol Package 3) Preser	nt on O Y or ken on Y or	outer r N Outer r N Sample
Relinquish		Received		] [	elinqui	shed		5 6 Received					1	norene-	oolog Pr	tween		4) Sam	v Prese	-	) (	4) Unbro Sample COC Re	Y or cord Pr	N resent
Redex	su	by	Date Time 2/5/03 0950		by COM		NTE.	by	RIGN	Date AL		Time	Si	amples	ncies Be Labels cord? Y	and			times	ithin .	- 38 - 4 3 3 4	Upon Sa Cooler Temp		Rec't or N °C
		J				STE		RE	WRIT	TE	N		-				٠.					· .		

				1							1 A &	Salar a	ell a
FLUOR Hanford			NTRAL PLATEAU (	CHAIN OF	CUSTOD	Y/SAMPLE	ANA	LYSIS REQUE	ST	F03	-025-001	-Page 1	of <u>1</u>
Collector POPE / PFIS-	rer/Hughe	Comp S TR	pany Contact ENT, STEVE	Telephon 373-56				Project Coordin TRENT, SJ	ator	Price Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Characterizat	ion - Soll		oling Location 6-B-58 (0.5 ft)					SAF No. F03-025		Air Quality		45]	Days
Ice Chest No. ERC	02 501	Field	Logbook No.		COA 119143ES	10		Method of Ships FEDERAL EX	nent PRESS				
Shipped To 7YYT 10-29-0 EBERLINE SERVICES (Form	3 RCTO	Offsi	te Property No.	A040	005	9		Bill of Lading/A	ir Bill I	10. S€Z	= 05 F	· <u>C</u>	J _a
POSSIBLE SAMPLE HAZAF			Preservation	Cool 4C	Cool 4C								
Special Handling and/or St	aroga	•	Type of Container	aG	аG							1.3	
Special Hallening alluvii St	orage		No. of Container(s)	ľ	4				<del></del>			; ; ;	
	· .		Volume	60mL	60mL								
	SAMPLE ANAL	YSIS		Pesticides - 8081	Chloro- Herbicides - EPA8151								
Sample No.	Matrix *	Sample Date	Sample Time		1 50 per 42 20					Dai (BA)			
B17RY5	SOIL	12-5-					* 2.		77	ETO	B 171	PVA	
										, , , , , , ,			
				8.0°	·								
CHAIN OF POSSESSION	· · · · · · · · · · · · · · · · · · ·	Sign/Pr	Int Names		Lope		. Corre	ONG	<u> </u>		<u> </u>		Matrix *
Relinquished By/Removed From  LABORATORY  SECTION  FINAL SAMPLE Disposal Me	Date/Time /6:0  Date/Time 123  12/8/03  Date/Time 124  5-12-03  Date/Time  2-12-03  Date/Time  Date/Time	Received By/S  MO-OO  Received By/S  Received By/S  Received By/S  Received By/S	tored in I	2-5-3	2/03 1/03 Pe R	rsonnel not avelinquish samp	vailable	e to om 3728 / <u>/ &amp; 3</u>				Date/Time	S=Soil SE=Sediment SO=Solid SI=Shudge W = Water O=Oil A=Air DS=Drum Solids DL-Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
DISPOSITION						2.500	· · · · · · · · · · · · · · · · · · ·					aratter a stille	. :

	*			n si kaya 🖟						·	1). 201	
FLUOR Hanford	i Inc.	CEN	TRAL PLATEAU (	CHAIN OF	CUSTOD	Y/SAMPLE ANA	ALYSIS REQU	EST	F03-	025-003	Page 1	of 1
Collector PODE PH	Her Hughe		ny Contact NT, STEVE	Telepho 373-5	ne No. 689		Project Coordi TRENT, SJ	nator	Price Code	8N		rnaround Days
Project Designation 200-LW-1/LW-2 Characteriza	ation - Soil		ng Location B-58 (17.5 - 20 ft)				SAF No. F03-025		Air Quality		43	Days
Ice Chest No. ERC C	2-501	Fleid L	ogbook No.		COA 119143ES	10	Method of Ship FEDERAL E					
Shipped To 100 10 -2	9-19-13A) Recra	Offsite	Property No. A	040	059		Bill of Lading	/Air Bill	No. SEE	OST	><	
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	None							
Special Handling and/or S	torage		Type of Container	G	G/P						= W.	i
		٠.	No. of Container(s)	250mL	250nL			<u> </u>			<u> </u>	
			Volume	See item (1) in	ı See iten (2) in Spepial							-
	SAMPLE ANAL	YSIS	:	Instructions,								Ex.
Sample No.	Matrix *	Sample Date	Sample Time									1000
B17RT3	SOIL	12-6-3	15:45		1/				776=	10	1317	215
B17RT6	SOIL	12-6-			/				TIE		3176	₹75
					<u> </u>			<u> </u>				
				<u> </u>							rij	
				Principal d	<u></u>			·			200	
CHAIN OF POSSESSIO Relinquished By/Removed From CUMN 45455564 Relinquished By/Removed From MO 026F1144	Date/Time/803	me OZG F  Received By/Stor	ed In D  or, depth D  ed In D	ate/Time	The range (1) (2)	CIAL INSTRUCTI laboratory is to analyze e organics from the WT Chromium Hex - 7196; Nicket 03, Gainnia Spe	pH within 24 hours PH-D analysis. See NO2/NO3 - 353.2; S	SAF COC	Comments for hold 030; Oil & Grease -	ing time issues		Matrix *  S=Soll  SE=Sediment  SO=Solid  SI=Studge  W = Water
Relinquished By/Removed From Green Howas Live M Relinquished By/Removed From	Date/Time /24	Received By/Stor	ed in D	per 12/8, Date/Time Date/Time		nium 232), Trhium H			- Library Sir	12/2/3	, * ^{*}	O=Oil A=Air DS=Drum Solid: DL=Drum Liquid T=Tissue WI=WIpe L=Liquid
Relinguished By/Removed From	Date/Time    S   D3   1000   S   D3   D450   Date/Time	Received By/Stor	ed in D	Date/Time		ersonnet not availa Relinquish samples Ref# 111 on 12/1	from 3728	:				V=Vegention X=Other
LABORATORY   Received B			V		itle		••				Pate/Time	<u>                                     </u>
FINAL SAMPLE Disposal M DISPOSITION	ethod	<u> </u>		<u> </u>	-	Disposed By					Date/Time	
A-6003-618(03/03)	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·									<u> </u>

FLUOR Hanfor	d Inc.	CEN	TRAL PLATEAU C	CHAIN OF	CUSTOD	Y/SAMPLI	E ANA	LYSIS REQU	EST	F03	-025-004	Page 1	of <u>1</u>
Collector + DR PM	Stell Haha		iny Contact NT, STEVE	Telepho 373-5				Project Coordi TRENT, SJ	nator P	rice Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Characteriz	ration - Soil	Sampl 216	ing Location -B-58 (22.5 - 25 ft)		:			SAF No. F03-025	A	ir Quality		45 )	Days
Ice Chest No.	2501	l H	Logbook No. NF - N- 3510-1	7	COA 119143ES	310	: 1 :	Method of Ship FEDERAL E	XPRESS			€ '	
Shipped To TYMS 16-79 -EBERLINE SERVICES (Fo	8-03 POLYA	Offsite	Property No AOY	0 05	7			Bill of Lading/	Air Bill No	" <i>5 हह</i>	-087		
POSSIBLE SAMPLE HAZA					] - :			<b>( •                                   </b>					
			Preservation	Cool 4C	Cool 4C	Cool 4C	Cool		None	None		<i>}</i> [.	
Special Handling and/or S	Starogo		Type of Container	aGs*	aG	Gs*	aG	<del></del>	G/P	G/P		-	
Special Handling and/or k	Storage	ė.	No. of Container(s)	3	1	3	1	1	1		,	5	
			Volume	40mL	120mL	40mL	120r	ոե 250տե	500mL	500mL	i i		
			<u>.</u>	VOA - 8260A (TCL)	Special	Glycols, &	PCBs -	Special	See item (3) in Special	Special	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	
	SAMPLE ANALY	YSIS			Instructions.	Ketones - 8015 {1-Butanol, Ethylene		Instructions.	Instructions.	Instructions.	) - 1 - 1		to a
			*			glycol)				18/3		i	
Sample No.	Matrix *	Sample Date	Sample Time				100						
B17RT8	SOIL	12-7-	3 10.30			-				. /	7167	0 B17	RVI
			4	4				ersonnel not ava		•			
•							l r	relinquish sample: tef# <u>jA</u> on <u>/2</u>	s from 3728 /パンプロン	·			ļ
									1				
CHAIN OF POSSESSION	ON Date/Time 160	Sign/Prin		ate/Time /		CIAL INSTE	RUCTIO	ONS pH within 24 hours o	of sample rece	elpt. The labora	tory is to report	kerosene	Matrix *
Relinquished By/Removed Brom	DAMAS 12.7.3		er RMA Fridge	12-7-3	rang	e organics from	the WTI	PH-D analysis. See	SAF COC Co	mments for hol	ding time issues		S=Soil. SE=Sediment SO=Solid
Relinguished By/Removed From	Date/Time 1230	Received By/Sto	red In . D	ate/Time	<b>⊋20</b> (i)	Semi-VOA - 82	70A (TC	L) {Phenol}; Semi-`otal petroleum hydro	VOA 8270	A (Add-On) (Ti	ributyl phosphat netroleum hydi	e); TPH- ocarbons -	S1=Shadge W = Water
SHE Trailer KMA	Hridge 129-03	Received By/Sto	red in Proportion	ate/Time	kero	sene range): TF	H-Gasol	line Range - WTPH- pertrace) (Arsenic, I	G				O=Cil A=Air
TADAKIDENUI	WWWDersite	0 14	# 6 194	<u>-03 14.</u>	CP ICP	Metals - 6010A 1 - (CV)	(Superti	race Add-On) (Antir	nony, Berylli	um, Bismuth, C	opper, Nickel)	Mercury -	DS=Drum Solids DL=Drum Liquids T=Tissue
Reinquished By/Removed From	26 D11-03	Received By/Sto	Ten mynaus	mate/Time	13 (3) Cya	IC Anions - 300 mide - 9010; pH	0.0 (Chlo (Soil) - 9	oride, Fluoride, Nitra 9045	te, Nitrite, Ph	osphate, Sulfate	e); Ammonia	50.3; Total	W!=Wipe L=Liquid V=Vegetation
Relingenty by Benoved From	DIVESTUDITO.	Received By/Sto		)110310		operor various	on trun	undir 125, Comma	20, 200	4 /2		A The state of the	X=Other
Relinguished By/Removed From	Date/Time	Received By/Sto	red In 12 1200 11	Pate/Tune 03			<u> </u>	K	12/	~/ <i>&gt;</i>			ζ.
LABORATORY   Received I	Ву	,		044 L.	itle	m1		-			Í	Date/Time	
SECTION Re FINAL SAMPLE Disposal N	L by: Fred Ex	13/15/	13 0950 R	ec by	·JPE		osed By	· · · · · · · · · · · · · · · · · · ·		<del></del>	t _i	Date/Time	11:-
DISPOSITION Disposar	rayurott					0					<u> </u>	*: 2	<u>, , , , , , , , , , , , , , , , , , , </u>

200-LW-I/LW-2 Characterization - Soil  216-B-58 (27.5 - 30 ft)  Ice Chest No. EP C O Z 50    Shipped To TYPE 10-29 CO POSSIBLE SAMPLE HAZARDS/REMARKS  Preservation  Special Handling and/or Storage  Air Quality  F03-025  Air Quality  FO3-025  Fo3-	naround Days
200-LW-I/LW-2 Characterization - Soil  216-B-58 (27.5 - 30 ft)  Ice Chest No. EP C O Z 50    Shipped To TYPE 10-29 CO POSSIBLE SAMPLE HAZARDS/REMARKS  Preservation  Special Handling and/or Storage  Air Quality  F03-025  Air Quality  FO3-025  Fo3-	
Shipped To two 1029 Co Reservation Preservation Type of Container G G GP Bill of Lading/Air Bill No. See OS P Container G G GP	3
POSSIBLE SAMPLE HAZARDS/REMARKS  Preservation  Type of Container  G G/P	
Preservation Cool 4C None  Type of Container G G/P	
Special Handling and/or Storage  Preservation Type of Container G G/P	
Special Handling and/or Storage Type of Container	<b>∫</b> -}
	L
No. of Container(s)	4.
Volume 250mL 250mL	
See item (1) in Special Special Instructions.  SAMPLE ANALYSIS	
Sample No. Matrix * Sample Date Sample Time	
B17RV5 SOIL 12-7-3 14:10 X 1 715 TO B17RV7	
	*
	·
CHAIN OF POSSESSION Sign/Print Names SPECIAL INSTRUCTIONS The laboratory is to analyze pH within 24 hours of sample receipt. The laboratory is to report kerosene	Matrix *
Relinquished By/Removed from Date/Time 16:40 Received By/Stored In Date/Time 12:30 Received By/Stored In Dat	S=Soil SE=Sediment SO=Soild Si=Sludge
MODZG Ref #1 12/8/03 Greg Thomas Star homo 12/8/1) (2) Nickel-65; Gamina Spec-Radium-220, Radium-220,	W = Water O=Oil
Received By/Removed From Date/Time 12/3 Received By/Stored In Date/Time Date	A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time  Signicial Line 12-12-03 0430 FED EX	WI=Wipe L≈Liquid
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to	V=Vegetation X=Other
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Ref # 14 on 12 /12 / 83	1.0
LABORATORY Received By Title Date/Time SECTION	
FINAL SAMPLE Disposal Method Disposal Method Disposal Method Disposal Method	

A-6003-618(03/03)

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ELUOR Hanford	d Inc.		TRAL PLATEAU C	HAIN OF	CUSTOD	Y/SAMPLE AN	NALY	ȘIS REQUE	ST	F03-	0 <b>25-</b> 008 s	Page <u>1</u> 0	ŧ 1
Collector HDD H	Ses Huho	S Compan TREN	ry Contact IT, STEVE	Telephon 373-56	e No. 89	.i		oject Coordin ENT, SJ	ator 1	Price Code	8N	Data Turi	around Days
Project Designation 200-LW-1/LW-2 Characteriza	t ation - Soil		ng Location. 3-58 (97.5 -100 ft)					F No. 3-025	Ā	Air Quality		45 L	ays
Ice Chest No. GRCO	2501	Field L.	F 3561		COA 119143ES	10		thod of Ships FEDERAL EX			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Á	
Shipped To TYTS ) ( EBERLINE SERVICES (For	0-19-03 Pera	Offsite	Property No. A	040	059		Bi	II of Lading/	ir Bill N	° 5625	037		
POSSIBLE SAMPLE HAZA	RDS/REMARKS												
			Preservation	Cool 4C	None		± ';					, ,	
   Special Handling and/or S	Storage		Type of Container	G	G/P						j		
			No. of Container(s)	1	1								
			Volume	250mL	250mL						i i		
	SAMPLE ANAL	YSIS		See item (1) in Special Instructions.	See item (2) in Special Instructions.								
Sample No.	Matrix *	Sample Date	Sample Time		1						10 m 14 m		
B17RW4	SOIL	12-10-03	1245	X	/					TIE	70 B	17RW	6
				-		<u> </u>			-:		<u> </u>		
							<u> </u>			<del>  </del>			to a
				<del> </del>	<u> </u>			<del></del>	· ·				
CHAIN OF POSSESSION	ON	Sign/Prin	Names		SPF	CIAL INSTRUC	TIONS		1		1		Matrix *
Relinquished By/Removed Form  LIQUE MO -02  Belinquished By/Removed From  Relinquished By/Removed From  Relinquished By/Removed From  Cort Cort Cort  Relinquished By/Removed From  LABORATORY  Received  SECTION	Date/Time   Received By/Stor Received By/Stor Received By/Stor Received By/Stor Received By/Stor	ed In # 1 MO DU L.  2 In pm Mode L.  2 In pm Mode L.  3 3 372 8  1 Mode 1 2 120  1 Mode 1 2 120  1 Mode 1 2 120	Date/Time	715 The range (1) (2) (2) (7) (7)	Chairman and laboratory is to anale organics from the Chromium Hex - 71 Nickel-63, Gamman arium 232); Tritium Personnet not avi Relinquish samp Ref # 35 on 12	yze pH v WTPH-I 96; NO2 8pec - R - H3; C; anable t les from	vithin 24 hours of D analysis. See MO3 - 353.2; S addum (Radinum arbon 14; Stront 10 1 3728	SAF COC ( ulfides - 90 <del>226, Radiu</del>	Comments for hole 30; Oil & Grease in-228); Techneti — Total Sr	ding time issue: -413.1 um-99; Isotopi  P 12/2	Thorium	S=Soil SE=Stediment SO=Solid SI=Studge W= Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wi=Wipe L=Liquid V=Vegetation X=Other	
FINAL SAMPLE Disposal DISPOSITION											- 1		

			· · · · · · · · · · · · · · · · · · ·									<u> </u>		
FLUOR Hanford	Inc.	CEN	ITRAL PLATEAU C	CHAIN O	CUSTO	DY/SAMPLE	ANA	LYSIS	REQUEST	r	F03-	025-044	Page 1	of ' <u>1</u>
Collector ADP/P	1Sto 1 Hooks	Compa TRE	ny Contact NT, STEVE	Telepho 373-5			÷	Project TRENT,	Coordinate SJ	r Pri	ce Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Characteriza	tion - Soil		ing Location -B-58 (22.5 - 25 ft)					SAF No F03-025		Aiı	Quality	O	45 I	Days
ice Chest No. BRC 0	2 501	Field I	Logbook No. HNF+ N - 351.0;		COA 119143E	S10			of Shipmen			a	1. 1. 1. 18.6 <u> </u>	
Shipped To TYYTS10-2 EBERLINE SERVICES (For		Offsite	Property No	040	05	7		Bill of	Lading/Air	Bill No. Seを	0370	•	7	
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	None									
Special Handling and/or S	torage		Type of Container	G	G/P								100 100 100	
	· · · · · · · · · · · · · · · · · · ·		No. of Container(s)	250mL	250mL		· 				· <del> </del>			
			Volume	See item (1)		16.								
	SAMPLE ANALYSI	S		Special Instructions	Special									
Sample No.	Matrix *	Sample Date	Sample Time											
B17RV2	SOIL /	<u>2-7-</u>	3 10:30	X	/			44			7/1-	700 /	12RL	1/
		<del></del>											· A	
		· .					· · · · ·					,		
				<del></del>			┢				<u> </u>		<del>                                     </del>	
CHAIN OF POSSESSIC Relinquished By/Removed From SHC T(G) Ler SMA) Relinquished By/Removed From SHC T(G) Ler SMA) Relinquished By/Removed From D SA STORY Received From Relinquished By/Removed	Date/Time 15:00 Date/Time 1330 Date/Time 1330 Date/Time 1000	Received By/Ste TMD TM Received By/Ste Received By/Ste Received By/Ste	ored in A Friday or	Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time	730 (1 903 (1 903 (1 100 (1) 101 (1) 101 (1)	Personnel not a Relinquish sam Ref# 114-on r	analyze the W7 - 7196; - 7196; - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196 - 7196	PH within IPH-D anal NO2/NO3 PRAdmin IS: Carbon Die to	ysis. See SAF - 353.2; Sulfic TRading-226 14; Stromium	COC Con les - 9030; Pedium 7	oments for hole Oil & Grense	ding time issue - 413.1	es	Matrix * S=Soil SE=Sediment SO=Solld SI=Sindge W= Water O=Oil A=Air DS=Drum Solid DL=Drum Liqu T=Tissue WI=Wipe L=Liquid V=Vegenation X=Other
	by: FedEx	12/15/	63 0950 R	ec.by			osed By	v	- 	-			Date/Time	
FINAL SAMPLE Disposal N DISPOSITION	Aethod					U Sispi	ouve D			<u> </u>				

## Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: THU- HANFORD

Date:

Purchase Order / Project# /
SAF# / SOW# / Release #: F03 -025

LvLI Batch #:

03/21369

Sample Custodian:

	NOTE: EX	PLAIN ALL D	ISCREPANCI	ES
1.	Samples Hand Delivered or Shipped	Carrier /	El E	Airbill# 7923 8938 822
2.	Custody seals on coolers or shipping	□xes	□ No	□ No Seals Comments
	container intact, signed and dated?	<b>-</b>		
3.	Outside of coolers or shipping containers are free from damage?	☐ Yes	□ No	
4.	All expected paperwork received (coc and other client specific information) sealed in	₽Yes	□No	
5.	plastic bag and easily accessible?  Samples received cooled or ambient?	Temp /	.5 °c	Cooler # ERC - 02 - 501
6.	Custody seals on sample containers intact, signed and dated?	∠ Yes	□ N ₀ 1	□ No Seals
7.	coc signed and dated?	1 Yes	□ No :	
8.	Sample containers are intact?	- 🗗 Yes	□ No	
9.	All samples on coc received? All samples received on coc?	Yes	□ No	
.10	. All sample label information matches coc?	☑ Yes	□ No	
11.	Samples properly preserved?	D Yes	□ N ₀	1
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	□ No	
13.	VOA, TOC, TOX free of headspace?	☐ Yes	□ No	ZNIA
14.	QC stickers placed on bottles designated by client?	□ Yes	□ No	Ø WA
15.	Shipment meets LvLl Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	Yes	□ No	
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	□ Yes	□ No	ET No Discrepancies



# Lionville Laboratory, Inc. PEST/PCB ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03 LVL LOT # :0312L369

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
	· · · · · · · · · · · · · · · · · · ·	_ `	·			·· <u> </u>
B17RY5	001	S.	03LE1625	12/05/03	12/16/03	12/30/03
B17RY5	001 MS	s	03LE1625	12/05/03	12/16/03	12/30/03
B17RY5	001 MSD	s	03LE1625	12/05/03	12/16/03	12/30/03
						*
LAB QC:			**	en en <del>e</del> n en		
PBLKTB	MB1	\$	03LE1625	N/A	12/16/03	12/30/03
PBLKTB	MB1 BS	S	03LE1625	N/A	12/16/03	12/30/03

A. 16/09



#### **Analytical Report**

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00 Date Received: 12-15-2003

#### CHLORINATED PESTICIDES

One (1) soil sample was collected on 12-05-2003.

The sample and its associated QC samples were extracted on 12-16-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 12-30-2003. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The required holding time for extraction and analysis was met.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. Two (2) of twenty (20) blank spike recoveries were outside acceptance criteria.
  - Four (4) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 6. All initial calibrations associated with this data set were within acceptance criteria.
- 7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Láboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\pest\tnu hanford\0312-369.pes

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 4 pages.

1/20/04 Date

#### Lionville Laboratory Sample Discrepancy Report (SDR) SDR#: 046022 Initiator: TEURNY Batch: 0312L, 349, 385, 424 Parameter: 2608H Date: Samples: Milmorand F Matrix: Client: TW Method: (SW846/MCAWW/CLP/ Prep Batch: (SELLZS 1. Reason for SDR a. COC Discrepancy Tech Profile Error Client Request Sampler Error on C-O-C Transcription Error Wrong Test Code b. General Discrepancy Missing Sample/Extract Container Broken Wrong Sample Pulled Label ID's Illegible Hold Time Exceeded Insufficient Sample Preservation Wrong Received Past Hold Improper Bottle Type Not Amenable to Analysis Note : Verified by [Log-In] or [Prep Group] (circle)...signature/date: c. Problem (Include all relevant specific results; attach data if necessary) Recover 48 COTOF 70-136/ DEFRUTTION +S OBLEMEZS-BS COMPLINDS AIDEN W/, DDD-65/, ON AID 50%, 319-1 ms ENDAID LO!, Alphachler (65), IMSD ENDAID 65!, IMSD DETABLE 55!, IMSD DETABLE 45!, 389-1 ms DETABLE 60%, 389-1 ms DETABLE 55!, IMSD DETABLE 45! will rand 2. Known or Probable Causes(s) LAB CLERENGLY ESTABLIANT CONSE CONSTOLLING 3. Discussion and Proposed Action Other Description: Re-log Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructions...signature/date: ∨Concur with Proposed Action Disagree with Proposed Action: See Instruction Include in Case Narrative Client Contacted: Date/Person Add Cancel 5. Final Action...signature/date: ______ Other Explanation: Verified re-[log][leach][extract][digest][analysis] (circle) X Included in Case Narrative Hard Copy COC Revised **Electronic COC Revised EDD Corrections Completed** When Final Action has been recorded, forward original to QA Specialist for distribution and filing. Distribution of Completed SDR Route Distribution of Completed SDR Route X Initiator X Lab General Manager: M. Taylor Metals: Beegle Inorganic: Perrone ١ X Project Mgr. Stone Johnson/Haslett GC/LC: Kiger X Technical Mgr. Wesson/Daniels MS: Rychlak/Layman X QA (file): Alberts Log-in: Meinic Data Management: Feldman Admin: Soos Sample Prep: Beegle/Kiger Other: _



#### GLOSSARY OF PESTICIDE/PCB DATA

# DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.
- .I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

# **ABBREVIATIONS**

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.



#### GLOSSARY OF PESTICIDE/PCB DATA

- This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

Pesticide/PCBs by GC, CLP List

Report Date: 01/15/04 08:42 Client: TNUHANFORD F03-025 H2461 Work Order: 11343-606-001-9999-00 RFW Batch Number: 0312L369

					•	
Cust ID	: B17RY5	B17RY5	B17RY5	PBLKTB	PBLKTB BS	
Sample RFW# Information Matrix	: SOIL	001 MS SOIL	001 MSD SOIL	03LE1625-MB1 SOIL	03LE1625-MB1 SOIL	
D.F. Units		1.00 UG/KG	1.00 UG/KG	1.00 UG/KG	1.00 UG/KG	
Surrogate: Tetrachloro-m-xylences Decachlorobipheny	and the second s	80 % 85 %	75 % 90 % ======fl	75 % 85 % =======f1	80 % 85 % ========f1	======================================
Alpha-BHC Beta-BHC	1.7 U 1.7 U	70 % 75 %	70 % 80 %	1.7 U 1.7 U	70 % 75 %	
Delta-BHC me gamma-BHC (Lindane)	1.7 U	70 % 70 %	65 *	1.7 U 1.7 U	60 * % 70 %	
Heptachlor Aldrin	1.7 U 1.7 U	75 % 65 %	75 % 70 %	1.7 U 1.7 U	70	
Heptachlor epoxide Endosulfan I		70 % 90 %	70 % 75 %	1.7 U	70 % 80 %	
Dieldrin 4,4'-DDE	3.5 U	70 % 70 %	75 % 75 %	3.3 U 3.3 U	70 % 70 %	
Endrin Endosulfan II	3.5 U 3.5 U	85 % 75 %	85 % 80 %	3.3 U 3.3 U	80 % 75 %	
4,4'-DDD Endosulfan sulfate		70 % 70 %	70 % 70 %	3.3 U 3.3 U	65 * % 70 %	
4,4'-DDT	3.5 U	70 %	75 % 95 %	3.3 U 17 U	75 % 90 %	
Methoxychlor Endrin ketone	17 U 3.5 U	95 % 75 %	75 %	3.3 U	<b>7</b> 5 %	
Endrin aldehyde alpha-Chlordane	3.5 U 1.7 U	60 * % 65 * %	65 * % 75 %	3.3 U 1.7 U	50 * % 75 %	
gamma-Chlordane	1.7 U	70 ዩ 170 ሀ	70 % 170 ሀ	1.7 U 170 U	70 % 170 U	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of Advisory limits.



(6) KOA BNA PIPES From Wells DIG Nich Lionville Laboratory Use Only 03/26369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS DEFGHI Client TNU Hanford F03-025 6 Refrigerator # Liquid Est. Final Proj. Sampling Date ___ #/Type Container AGL AGL BAGR. Solld BACL Project # 11343 - 606 - 001 - 9999-07 Liquid Project Contact/Phone # __ Volume Lionville Laboratory Project Manager O. John Som 40 250 120 120 250 500 60 40 Solid OC SPEC Del 500 TAT 30 days Preservatives ORGANIC INORG **ANALYSES** Pest/ Date Rec'd /2/15/03 Date Due 1-14-03 REQUESTED Lionville Laboratory Use Only Matrix MATRIX QC CODES: の下部のメ ISFD FOGGR 2CRC IN387 Date Time i ah Chosen Matrix Client ID/Description S - Soil Collected Collected (V) SE - Sediment SO - Solid MS MSD SL - Sludge 1500 W - Water 001 BITRY5 12/5/03 0 - OI 12/6/03 1545 A - Air BITRT3 DS - Drum 1545 Solids BITRIG DL - Drum 12/7/03 1030 Liquids BITRTS EP/TCLP 140 Leachate BITRUS WI - Wipe 12/10/03 1245 X - Other BITRWH F - Fish 12/7/03/1030 BITRV2 DATE/REVISIONS: Special Instructions: SAF # F03 -025 17-19-01 1 Add 08015 to -004 Lionville Laboratory Use Only Run Matrix ac Samples were: Tamper Resistant Seel was: 1) Shipped ..... or 1) Present on Outer Hand Delivered _____ Package Y or N MET (): RCRA + Sb. Be. Bi, Cu. Ni Airbill # _____ 2) Unbroken on Outer Package Y or N 1 C 0 = C1. F. NO. NOZ. PO4. SO4 2) Amblent or Chilled 3) Present on Sample 3) Received in Good Y or N Condition Y or M 4) Unbroken on 4) Samples Sample Y or N Properly Preserved or N **COC Record Present** Received Relinguished Received Relinguished Discrepancies Between Date Time Time Upon Sample Rec't Samples Labels and 5) Received Within Y or N COC Record? Y or N Demi 12/15/03/0950 ORIGINAL Fedex Cooler "COMPOSITI NOTES: Y or N -Temp.

Waste

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FLUOR Hanford Inc.	CENTRAL PLATEAU C	CHAIN OF	CUSTODY/S	SAMPLE ANA	LYSIS REQUE	ST	F03-025-001	Page 1 of 1	
Collector POPE / PFISTER / Hughes	Company Contact TRENT, STEVE	Telepho 373-5			Project Coording TRENT, SJ	ator Price Cod	e 8N	Data Turnaround 45 Days	j
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (0.5 ft)	17.0			SAF No. F03-025	Air Qua	lity 🗌	45 Days	
Ice Chest No. ERC 02 501	Field Logbook No.		COA 119143ES10		Method of Shipn FEDERAL EX	PRESS	- · · · · · · · · · · · · · · · · · · ·		
Shipped To 1970 10-29-03 EBERLINE SERVICES (Formerly TMA) RC ra	Offsite Property No.	A04	0 059	<b>)</b>	Bill of Lading/A	ir Bill No. 5 d	E OUP	<u> </u>	
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	Cool 4C						
Special Handling and/or Storage	Type of Container	aG	aG						
Special Manuful Storage	No. of Container(s)	l 60mL	60mL						
	Volume	Pesticides -	Chloro-						
SAMPLE ANALYSIS		8081	Herbicides - EPA8151						
Şample No. Matrix * Sai	mple Date Sample Time	o V. sair s							
	-5-3 /5!∞					TIETO	B 171	RYG	
								*	
CHAIN OF POSSESSION  Relinquished By/Removed From Date/Time /6:00 Reco		ate/Time	SPECIA	L INSTRUCTIO	ONS		•	Matrix S-Soil SE-Seilne	
Relinquished By/Removed From Date/Time, 1230 Reco	eived By/Stored In D	2-5-3 pte/Time 2015 12	1230					SO=Solid SI=Sludge W = Water O=Oil	
Relinquished By/Removed From Date/Time 1245 Reco	cived By/Stored in D	ate/Time <u>(</u> 03 /4	Person	nnel not available quish samples fro	: to m 3728			A=Air DS=Drum S DL=Drum I T=Tissue	
5)6A(ENDA612-12-03 1		ate/Time	Ref #	/A on/2/12	103			Wi≠Wipe L≠Liquid V≈Vegetati	tion
	) peris-	Date/Time						X=Other	٠
Relinquished By/Removed From Date/Time Rec	urva Dyrotoya iii D						·		
LABORATORY Received By SECTION		.1	itle			· · · · · · · · · · · · · · · · · · ·	,	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION		1	au tha	Disposed By				Date/Time	,

FLUOR Hai	nford Inc.	CEN	TRAL PLATEAU	CHAIN O	F CUSTO	DY/SAMPI	LE ANA	LYSIS REQ	UEST	F03	-025-003	Page <u>1</u>	of 1
Collector PDD	After Hughes	S Compa	ny Contact NT, STEVE	Telepho 373-	one No. 5689			Project Coore TRENT, SJ	linator	Price Code	8N		irnaround
Project Designation 200-LW-1/LW-2 Charac	terization - Soil		ing Location B-58 (17.5 - 20 ft)	·			,	SAF No. F03-025		Air Quality		45	Days
Ice Chest No. & C	02-501	Field L	ogbook No.		COA 1191431	S10		Method of Sh FEDERAL					
Shipped To TWO IC	(1-29-19-13) Recra	Offsite	Property No. A	040	05	}		Bill of Lading	/Air Bill	No. SGE	= 08 P	>	
POSSIBLE SAMPLE HA	AZARDS/REMARKS		Preservation	Caol 4C	None	/							
Special Handling and/	or Storage		Type of Container	G	G/P								
20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			No. of Container(s)	1	1		<u> </u>						
			Volume	250mL	250nL		ļ						
	SAMPLE ANALY	/SIS		See item (1) in Special Instructions.	Special								
Sample No.	Matrix *	Sample Date	Sample Time	en en en en	17							W. C.	
B17RT3	SOIL	12-6-3	15:45		1/					77.6=	70	317	215
B17RT6	SOIL	12-6-3	3 15:45		1					TIE	i		75
				1							·		
							<u> </u>		ļ				
CHAIN OF POSSES				<u> </u>									
Relinquished By/Removed From CUNN SUGAR Relinquished By/Removed From MO 026Fr/19-1	Date/Fime/800 Date/Fime /230	Sign/Print Received By/Store Pro OC F Received By/Store	din Da		The ran	ge organics from Chromium Hex	analyze pi the WTPI - 7196; No	H within 24 hours of H-D analysis. See D2/NO3 - 353.2: S	SAF COC ( ulfides - 90	cceipt. The laborat Comments for hold 30; Oil & Grease -	ing time issues.	• • •	Matrix *  S~Soil  SE=Sediment  SO=Solid  S1=Studge
Relinquished By/Removed From Green There's State Relinquished By/Removed From	Date/Time /245	Received By/Stored	din Da	5 /2/8/ te/Time \$ /03 /2 te/Time	45 (F)	orian <del>-232),</del> Iff	illin 113;	-renguns (Caanus) Carbon-14; Stront	<del>126; Hadii</del> ium-89,90 -	m-228): Tochnorm - Total Sr	12/2/3	Chariem	W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From	-17   Z 03   1000   Date/Time   15   03   0450   Date/Time	Received By/Stored	i In Da	te/Time te/Time		Personnel not Relinquish sa Ref#///on	imples fro	om 3728				;	WI=Wipe L=Liquid V=Vegetation X=Other
LABORATORY   Received	d By			Tit	le	<u> </u>						A. Cr'	
SECTION			A STATE OF THE STA		y energia						Da	te/Time	
FINAL SAMPLE Disposa DISPOSITION	l Method					Dispo	sed By				Da	ite/Time	
A-6003-618(03/03)													

31. s.

FLUOR Hanfo	rd Inc.		CENTR	RAL PLATEAU C	CHAIN OF	CUSTO	DY/SAMPL	E ANA	LYSIS REQU	EST	F0:	3-025-004	Page 1	of I
Collector + DD	Stollynh	as c	ompany TRENT,	Contact , STEVE	Telephor 373-50	ne No. 689		ż	Project Coord TRENT, SJ	inator	Price Code	8N	Data Tu	rnaround
Project Designation 200-LW-1/LW-2 Characteric	zation - Soil	s	ampling 216-B-5	Location 58 (22.5 - 25 ft)		10 to 11.			SAF No. F03-025		Air Quality	y 🗆	45	Days
Ice Chest No.	2501	F	ield Logb HAJF	book No. - N-3516-1		COA 1191431	ES10		Method of Ship FEDERAL E	XPRESS				
Shipped To That to Z	8-03 Pecr		ffsite Pro	operty No AOY	0 05	9			Bill of Lading	/Air Bill	[№] S <i>EE</i>	780		
POSSIBLE SAMPLE HAZA	ARDS/REMARKS			Preservation	Cool 4C	Cool 4C	Cool 4C	Cool	.	None				
Special Handling and/or	Ptouogo		Т	ype of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/P			
Special trainding attoor	Storage		N	o. of Container(s)	3	1	3	1	ĵ	1	1 1			
				Volume	40mL	I20mL	40mL	120m	nL 250mL	500ml	L 500inL			
	SAMPLE ANAI	LYSIS		1 g 435 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	VOA - 8260A (TCL)	See item (1) Special Instruction	Glycols, &	PCBs - 1	See item (2) in Special Instructions.	See item (3 Special Instruction	Special	1		
							Ethylene glycol}				83			
Sample No.	Matrix *	Sample I	Date	Sample Time				4000						
B17RT8	SOIL	12-7	-3	10:30	سسئن		_				/	TIBT	U B17	RVI
		 			p.								<del> </del>	
		<u> </u>	· · · · · · · · · · · · · · · · · · ·						rsonnel not avai		28		· .	
							<u> </u>	— Re	ef# <i>jA</i> on <i>jZ_i</i>	12 /0	<u> </u>	· · · · · · · · · · · · · · · · · · ·		
CHAIN OF POSSESSIO		I Sign/	Print Nar	ll mes		SPI	ECIAL INSTR	UCTIO	NS .	<u> </u>		1		Matrix *
Relinquished By/Removed From	Date/Time 160	Received By	/Stored In	On A C a Dat	te/Time 160	The	laboratory is to	analyze pl	H within 24 hours o I-D analysis. See S	f sample re	ceipt. The labora	tory is to report	kerosene	S=Soil
Relinquished By/Removed From	Date/Time 1222	Received B	/Stored In	RMA Fridge 12	2-7-3 te/Time 13	20 m			) (Phenol); Semi-V			_		SE=Sediment SO=Selid S1=Studge
SHE Traner KMA F	ridge 124-03	Tman	arsen	baranten	12-9-03	Die	sel Range - WTP	H-D {Tot	al petroleum hydro e Range - WTPH-0	carbons - d	iesel range, Total	petroleum hydro	carbons -	W = Water O=Oil
Rotaguistad By Reinoyed From	n)//W5e29	() Received By	Stored in	= 2 D-9=	te/Time 03/43	∠\	ICP Metals - 60	10A (Supe	ertrace) (Arsenic, B ce Add-On) (Antim	arium, Cac	lmium, Chromium lium, Bismuth, Co	, Lead, Selenius opper Nickel): I	n, Silver);	A=Air DS=Drum Salids
Removed From Dept. 12 10 10 10 10 10 10 10 10 10 10 10 10 10	Date/Time 100	Received B	/Stored In	n mares			'1 - (CV)	.0 {Chlori	de, Fluoride, Nitrat				•	DL=Drum Liquids T=Tissue Wt=Wipe L=Liquid
Retirection of Py/Bemoved Intentity	Date/Tim	A ROLLY B	/Stored In	3728 13"	te/Time [17310]	7	opco riou	on training	main (37, Coolin ) nonj 723, Coolin (	70, 2 m spin	, pi		Augumm-	V=Vegetation X=Other
Religguished By/Renioved From	Date/Time	Received B	/Stored In		te/Time		3 ครั้งอุณแกนเกร <i>ัววัก</i>	, rom-c	RP	12/	/2/3			
LABORATORY Received B	у ,	19/1	e/m	0950 R	ec by	11100	MA					D	ate/Time	
FINAL SAMPLE Disposal M DISPOSITION	cthod Fred E	X /3-11	<u>, , , , , , , , , , , , , , , , , , , </u>	0730 K	ec pg	C		sed By			· · · · · · · · · · · · · · · · · · ·	Đ	Date/Time	
A-6003-618(03/03)			<u> </u>										<u></u>	·, ·
A-0000-010(00/00)													<u>.</u>	

ELUOR Hanfor	d Inc.		NTRAL PLATEAU (	CHAIN OF	CUSTO	Y/SAMPL	E ANA	LYSIS REQI	JEST		F03-	-025-008	Page 1	
Collector HDD H	Ses/High	S P Comp	any Contact ENT, STEVE	Telepho 373-5				Project Coord TRENT, SJ	inator	Price C	ode	8N	Data Tu	uri
Project Designation 200-LW-1/LW-2 Characterize	ation - Soil		ling Location 5-B-58 (97.5 -100 ft)			£		SAF No. F03-025		Air Qu	ıality		45	E
Ice Chest No. SPCO		Field	Loghook No. UF 356 /	: :	COA 119143ES	310		Method of Shi FEDERAL I	EXPRES					
Shipped To TWY ) ( EBERLINE SERVICES (For	0-19-03 Pero	Offsit	e Property No.	040	05°	Ī		Bill of Lading	/Air Bil	No. 50	<b>~</b>	037	<	-
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	None									
Special Handling and/or S	torage		Type of Container	G	G/P	·								†
			No. of Container(s)	1	1									十
			Volume	250mL	250mL									7
Section (Section )	SAMPLE ANA	LYSIS		See item (1) in Special Instructions.	See item (2) in Special Instructions.	1								-
Sample No.	Matrix *	Sample Date	Sample Time											
B17RW4	SOIL	12-10-03	3 1245	X	/			**************************************		17	ΙE	70 B	17RU	J
													* * * · · · · · · · · · · · · · · · · ·	1
														7
					ļ			· · · · · ·				-		
CHAIN OF POSSESSIO	<b>3.</b> 7	Sign/Prin		<u> </u>	1							·		
Relinquished By/Removed From  Relinquished By/Removed From  A OOC # 1 MO - OZ  Belinquished By/Removed From  Relinquished By/Removed From  Relinquished By/Removed From  Relinquished By/Removed From	Date/Time 15 Date/Time 12-13-10 Date/Time 12-0-3 Date/Time 12-0-3 Date/Time	Received By/Sto Received By/Sto Received By/Sto Received By/Sto Received By/Sto Received By/Sto	red In 1 MO 124 B	ate/Time 1211-0 ate/Time 12-11-03	7000 (1) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	e organics from Chromium Hex Nickel-63: Gam	analyze pł the WTPi - 7196; NO ma Spec - tium - H3; avantabio mples fro	I within 24 hours I-D analysis. See D2/NO3 - 353.2; S Radium (Radium Carbon 14; Strong et to un 3728	SAF COC	Comments	for holdi Grease - <del>cobnetin</del>	ing time issues	<del>Thorium</del>	S S S S S S S S S S S S S S S S S S S
SJC+TL & D/Sal-12 Relinguished By/Removed From Pedry 13	15103 095	Received Bullio	red In Da	ate/Time		(CI # <u>52()</u> (SI								
LABORATORY Received By SECTION				Tii	tle						-	D	ate/Time	
FINAL SAMPLE Disposal Medisposition	thod					Dispo	sed By					D	Date/Time	
A-6003-618(03/03)					<del>- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</del>	·						<del></del>	-	

		<u> </u>						<del></del>			T	
FLUOR Hanford Inc.	CENTI	RAL PLATEAU C	HAIN OF	CUSTOD	//SAMPL	E ANA	LYSIS REQU	JEST	F03	3-025-005	Page <u>1</u>	of 1
Collector 40DO 14660 HMOS	Company TRENT	Contact , STEVE	Telepho 373-5				Project Coord TRENT, SJ	inator	Price Code	8N		rnaround—
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling 216-B-	Location 58 (27.5 - 30 ft)		ne des			SAF No. F03-025		Air Qualit	у 🗀 🦾	45	Days
Ice Chest No. ERC 02501	Field Log	book No.		COA 119143ES1	0		Method of Shi FEDERAL E					
Shipped To 1000 1000 PLC CO. BBERLINE SERVICES (Formerly TMA) RECCO.	Offsite Pr	operty No.	2040	059	7		Bill of Lading	/Air Bill N	‰ 5∈€	-057	<u>_</u>	
POSSIBLE SAMPLE HAZARDS/REMARKS												
		Preservation	Cool 4C	None		ļ						
Special Handling and/or Storage		Type of Container	G	G/P								
Special Handling and Otorage		No. of Container(s)	1	1			ľ					
		Volume	250mL	250 nL								
			See item (1) in Special Instructions	See item (2) in Special Instructions.								
SAMPLE ANALYSIS	1.3			1/2 1							,	
	•			1 / Wy	· .							
Sample No. Matrix * Sam	ie Date	Sample Time	9	1000	80.06			68.00	is conside	and the state		
B17RV5 SOIL 12	7-3	14:10	X					710	TO	B17	Rリフ	
			7	1 4 1. 2 .						<u> </u>	1307	
	= 1											
	ign/Print Na	ames	^ *		IAL INSTR			·			<del></del>	Matrix *
KEUINDHUGHEST SETUPTION 12-7-3 MOC	ed By/Stored I シンム・チィル	and the second s	te/Time 7-3/16;		boratory is to organics from	analyze p the WTP	H within 24 hours H-D analysis. See	of sample re SAF COC (	ceipt. The labor Comments for ho	atory is to report Iding time issue	rt kerosene s	S=Soil SE=Sediment
	ed By/Stored I						O2/NO3 - 353.2; S - Radium (Radium				a Thorius—	SO=Solid Sl≈Sludge W = Water
		nes Dres thon	nte/Time				Carbon-14; Stron			O	<u>6 110.000m</u> **	O=Oil
Grey Thomas Nes Homo 12/8/03	ed By/Stored I	F- 12/03/2	3 124	5						12/2	3	DS*Dram Solids DL*Drum Liquids
Relinquished By/Removed From Date/Time Received SJOH EALAN 12-12-03 0930 FG	ed By/Stored I	n Da	te/Time					٠.				T=Tissue Wi=Wipe L=Liquid
Relinquished By/Removed From Date/Time Receiv		n Da	nte/Time	Pe	sonnel not	availabl	e to					V=Vegetation X=Other
prakx 12/15/03 0480	ed By/Stored led By/Stored 1	n Da	te/Time	ъ.	linquish san f# /A on 1	unles fro	ym 3728			·.		
						· 			- 1		·	<u> </u>
LABORATORY Received By SECTION			Ti	tle			•			*	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION			4.5%		Dispo	sed By					Date/Time	·

FLUOR Hanford Inc.	CENTRA	LL PLATEAU C	HAIN OF C	USTODY	//SAMPLI	E ANA	LYSIS F	REQUE	ST	F0.	3-025-044	Page 1	of 1
Collector Pade 124518 HOGNES	Company Co TRENT, S	ontact STEVE	Telephone l 373-5689				Project ( TRENT,	SJ	ltor Pi	ice Code	8N	Data Tur	T
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Lo 216-B-58	ocation (22.5 - 25 ft)				-	SAF No. F03-025		Ai	r Qualit	у []	45 ]	Days
Ice Chest No. ER C 02 501	Field Logbo	ok No. )F - 10 - 356-		COA 19143ES1	0		Method (	of Shipm RAL EXI					
Shipped To Try 510-18-03 Recra	Offsite Prop	perty No.	1400	59			Bill of L	ading/A	ir Bill No. ムタロ	037	<u>د</u>	· · · · · · · · · · · · · · · · · · ·	
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	None									
Special Handling and/or Storage	Ту	pe of Container	G	G/P									
	No.	. of Container(s)	1 250mL	250mL									
	<u> </u>	Volume		e item (2) in									
SAMPLE ANALYSIS			Special	Special nstructions.									
Sample No. Matrix * Sar	mple Date	Sample Time										17, 16	
B17RV2 SOIL /2	-7-3	10:30	X							774	720 %	1724	1/
										<del> </del>	_	-	•
				· .			<u> </u>		<del>,</del>	<u> </u>		.,	<u> </u>
				····					· · · · · · · · · · · · · · · · · · ·				
CHAIN OF POSSESSION	Sign/Print Nan	l	<u></u> _	SPEC	IAL INSTR	RUCTIO	NS NS		<del></del>	.1	• • • • • • • • • • • • • • • • • • • •	<u></u>	Matrix *
Relinquished By/Removed From Date/Time 16:00 Rece	eived By/Stored In  1e 1railer  eived By/Stored In	Da RmA Fridae	te/Time 133	The la range  (1) C  (2) 1	boratory is to organics from bromium Hex iskal 63: Gam	analyze p the WTP - 7196; N	H within 24 H-D analys O2/NO3 - Radium (	is. See S/ 353.2; Sul Radium 23	NF COC Cor fides - 9030; 26, Radium	nments for he Oil & Greas	ratory is to repo olding time issue e • 413.1 tium-99; Isotop	es.	S=Soit SE=Sediment SO=Solid SI=Sludge W = Water
Rethquished By/Rangeved Friting Date/Time 180 Rece	eived By/Stored In	_mo-026 Da	te/Time 03 143C	(TIIO)	ium-252); Tri	dan <del>- HS</del>	Carbon I	<del>l; Sirontu</del>	n-89,90 T	otal-Si /2	p 12/	2/3	O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wi=Wipe
N 2100-40100		10 10 1 W	te/Time LL	Per Per	sonnel not a	ıvailable	to						U=Vipe L=Liquid V=Vegetation X=Other
	eived By/Stored In 0F# 1P 5 eived By/Stored In		9-11-03 tg/Time	Re	linquish sam '# <u>IF</u> on <u>I</u>	ples fro	m 3728			•			
LABORATORY Received By. SECTION Rel. by Feder 13	<i>=01 ex</i>		Title C. by	I Per	us		•	*****				Date/Time	<u> </u>
FINAL SAMPLE Disposal Method DISPOSITION	·					osed By			7.			Date/Time	

# Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD Date: Purchase Order / Project# / SAE#/SOW#/Release #: F03-025 LvLI Batch #: Sample Custodian: 03/21 369 NOTE: EXPLAIN ALL DISCREPANCIES 792389388227 Airbill# Carrier Samples Hand Delivered or Shipped Custody seals on coolers or shipping Comments □ No ☐ No Seals container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? All expected paperwork received (coc and □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC - 02 - 501 Temp 1,5 °C 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No ¹ ☐ No Seals signed and dated? 7 7. coc signed and dated? □ No Sample containers are intact? D Yes □ No All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? 2 Yes □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No 14. QC stickers placed on bottles designated by ☐ Yes □ No client? 15. Shipment meets LvLI Sample Acceptance □ No Policy? (Identify all bottles not within policy. See reverse side for policy)

☐ Yes

□ No

E No

Discrepancies

SR-002-B

16. Project Manager contacted concerning

outside criteria)

discrepancies? name/date (or samples



#### Lionville Laboratory, Inc. PCB ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

CLIENT ID		LVL #		PREP #	COLLECTION	EXTR/PREP	ANALYSIS
						70/16/02	07/70/04
B17RT8 B17RT8		004 004 MS	S S	03LE1626 03LE1626	12/07/03	12/16/03 12/16/03	01/10/04 01/10/04
B17RT8		004 MSD	S	03LE1626	12/07/03	12/16/03	01/10/04
———	-						
PBLKTC PBLKTC		MB1 MB1 BS	S S	03LE1626 03LE1626	N/A N/A	12/16/03 12/16/03	01/10/04 01/10/04

Mister



#### **Analytical Report**

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00 Date Received: 12-15-2003

#### PCB

One (1) soil sample was collected on 12-07-2003.

The sample and its associated QC samples were extracted on 12-16-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 01-10-2004. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The sample was extracted and analyzed within required holding time.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. The blank spike recoveries were within acceptance criteria.
- 6. The matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. Confirmation was not required because target compounds were not detected in the sample.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Tainy Damiers

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\pest\tnu hanford\0312-369.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.

02



#### GLOSSARY OF PESTICIDE/PCB DATA

# DATA QUALIFIERS

- Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3 J.
- This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- 1 = Interference.
- .I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

## ABBREVIATIONS

- Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.



#### GLOSSARY OF PESTICIDE/PCB DATA

- This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

PCBs by GC

Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1 RFW Batch Number: 0312L369 PBLKTC BS B17RT8 B17RT8 PBLKTC B17RT8 Cust ID: 03LE1626-MB1 RFW#: 004 004 MS 004 MSD 03LE1626-MB1 Sample SOIL SOIL SOIL SOIL SOIL Information Matrix: 1.00 1.00 1.00 1.00 1.00 D.F.: UG/KG UG/KG UG/KG UG/KG UG/KG Units: 75 % 85 70 Surrogate: Decachlorobiphenyl 90 왕 : 100 60 70 % 0 90 75 80 Tetrachloro-m-xylene =======f1=====f1=====f1=====f1=====f1=====f1=====f1===== Ü 73 14 U 90 % 99 13 Aroclor-1016 13 U Ű 13 U U 14 Ū .... 14 Aroclor-1221 14 13 U Ü Ŭ 13 U U 14 14 Aroclor-1232 14 13 IJ 13 U 1.4 Ü 14 Ħ Aroclor-1242 14 U 13 Ü IJ 13 · U 14 U 14 Ù 14 Aroclor-1248 U 13 IJ Ü 14 IJĨ 14 U 13 Aroclor-1254 14 13 U 68 Aroclor-1260 U 89 97 14

for 1 ston

Report Date: 01/15/04 14:58

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

(6) KIDA BNA PIPES From Wells DIA Nich Custody Transfer Record/Lab Work Request Page / of / Lionville Laboratory Use Only 03121369 FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS DEFEHI Client TNUttunford F03-025 Retrigerator # Liquid Est. Final Proj. Sampling Date ____ #/Type Container AGL AGL BAGE. Solid BAGL Project # 1(343 - 606 - 001 - 9999 -07 Liquid Project Contact/Phone # __ Volume Lionville Laboratory Project Manager O. Wohn Son 40 250 250 500 120 120 Solid QC SPEC Del 500 TAT 30 days **Preservatives** ORGANIC INORG **ANALYSES** Date Rec'd 12/15/03 REQUESTED 1-14-03 Date Due Lionville Laboratory Use Only Matrix MATRIX QC CODES: TCR6 TSFD TSFD Time Chosen Date Lab : Matrix Client ID/Description Collected | Collected S - Soil SE - Sediment SO - Solid MS MSD St. - Sludge 12/5/03 1500 W - Water 001 BITR45 O-Oil 12/6/03 1545 A - Air BITRT3 DS - Drum 1545 Solids BITRIG DL - Drum 12/7/03 (030 Liquids BITRT8 EP/TCLP 1410 Leachate BITRUS WI - Wipe 12/10/03 1245 X - Other BITRWY F. Fish 12/7/03 1030 BITRV2 DATE/REVISIONS: Special instructions: SAF # F03 -025 Lionville Laboratory Use Only 17-19-01 1 Add 08015 to -004 Run Matrix ac Samples were: Tamper Resistant Seal was: 1) Shipped ---- or 1) Present on Outer Hand Delivered Package Y or N MET (): RCRA + Sb. Be, Bi, Cu, Ni Airbill # ____ 2) Unbroken on Outer Package Y or N 10 0 = C1, F. NO, NOZ, PO4 SO4 2) Ambient or Chilled 3) Present on Sample Y or N 3) Received in Good Condition Y or 4) Unbroken on 4) Samples Sample Y or N Properly Preserved-**COC Record Present** Relinguished Received Relinguished Received Discrepancies Between Date Time Upon Sample Rec't Date Time by Samples Labels and 5) Received Within Y or N COC Record? Y or N 12/5/03/0950 ORIGINAL Holding Times Dumi Cooler Fedex "COMPOSITI Temp. ____

FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST							EST	F03-025-001		Page 1 of 1	
Collector POPE / PFISTER / Hughes	Company Contact Teleph TRENT, STEVE 373-			one No. 5689			Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround	
Project Designation 200-LW-1/LW-2 Characterization - Soil		ng Location 3-58 (0,5 ft)				SAF No. F03-025		Air Quality 📋		45 Days		
Ice Chest No. ERC 02 50/	Field Logbook No.			COA 119143ES10		Method of Shipment FEDERAL EXPRESS		S				
Shipped To 1777 10-29-03 EBERLINE SERVICES (Formerly TMA) RC FC	Offsite	Property No.	A040 059			Bill of Lading/Air Bill No. SEE OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	Cool 4C			:		•			
Special Handling Wilder Storage		Type of Container	aG	aG						·		
Special Handling and/or Storage		No. of Container(s)	1	8. <b>1</b> . 1.								
		Volume	60mL	60mL								
SAMPLE ANALYSIS			Pesticides - 8081	Chloro- Herbicides - EPA8151	) .							
			:									
Sample No. Matrix * Sar	nple Date	Sample Time		optibility)					g daleyay	(24/60)		$(g, f) \in \{0\}$
B17RY5 SOIL /2	5-3	15:00		بنشت		ļ		77	E10.	B 17/	RY6	·
						ļ			<u> </u>			·
				_						<u> </u>		ļ
						<b></b> -						<u> </u>
CHAIN OF POSSESSION	Sign/Print l	Vames	L	SDE	IAL INSTR	UCTIO	ine				· ·	Matrix *
Relinquished By/Removed From Date/Time /6:00 Rece	ived By/Store 0-026	In Da Fridge#1 12	-3-3	;00	ial mote	CIR	JNS		•			S=Soli SE=Sediment SO=Solid
MO-026 Fridge #1 12/8/03 G.	ived By/Store	mes trus The	nte/Time	8/03								Si=Sindge W = Water O=Oil
Religionished By/Removed Grom Date/Time 1245 Received By/Stored In Date/Time  Greg Thomas Many 12/8/03  Personnel not available to Religionished By/Removed Grown Date/Time  Personnel not available to Religionish samples from 3728									A=Air DS=Drum Solids DL=Drum Liquids			
SJ6A(ENN6-12-12-03 F	Ref #/A on/2/12/03										T=Tissue Wi=Wipe L=Liquid V=Vegetation	
	PCIV	T	ate/Time				ta en					X=Other
Relinquished By/Removed From Date/Time Rece	ived By/Stor	d In Da	ate/Time			-			****			
LABORATORY Received By SECTION	:		<b>T</b>	itle				<del>-</del> .		D	ate/Time	·
FINAL SAMPLE Disposal Method DISPOSITION				ing Process	Dispo	sed By	-			. I	Date/Time	

A-6003-618(03/03)

FLUOR Hanford Inc.	CENTRAL PLATEAU CHA	LIN OF CU	STODY/SAMPLE AN		F03-025-003	Page 1 of 1
Collector +ODE HESTER HUGHES	Company Contact TRENT, STEVE	Telephone No 373-5689	<b>D.</b>	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (17.5 - 20 ft)			SAF No. F03-025	Air Quality [	45 Days
Ice Chest No. ERC 02 - 501	Field Logbook No.		OA 9143ES10	Method of Shipment FEDERAL EXPRESS	S	`
Shipped To 100 10-29-03 Recra	Offsite Property No. A04	00	59	Bill of Lading/Air Bill	No. SEE OS	<b>ک</b> د
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation		None		-	
	Type of Container	<b>G</b>	G/P			
Special Handling and/or Storage	No. of Container(s)	1	1/			
	Volume	250mL 2:	50vaL			
SAMPLE ANALYSIS	1	Special S	eer (2) in pedial rubtions.			
Sample No. Matrix * Samp	ole Date Sample Time					
B17RT3 ( SOIL /2-	6-3 15:45	- 1			776 70	13/72/5
B17RT6, SOIL 12.	-6.3 15:45	- 1	1		715 70	317815
CIVAN ON DOCUMENTO						
Relinquished By/Removed From Date/Time/803 Receive	gn/Print Names ad By/Stored In Date/Th  26 Fride#5 126-3	ne 3 1800	SPECIAL INSTRUCTION The laboratory is to analyze range organics from the WTI	oH within 24 hours of sample r	eccipt. The laboratory is to report	2=2011
Relinquished By/Removed From Date/Time 1230 Receive MO-026F1/97 #2 12/8/03 Greg	d By/Stored in Date/Tin Thomas Stug/Ilmo	ne /2.3人	(1) Chromium Hex - 7196; 1 (2) Nickel-65; Gamma Spec	102/N03 - 353.2; Sulfides - 90 - Radium (Radium 326: Radii	030; Oil & Grease - 413.1	SC=Solid SC=Solid SC=Solid SC=Solid SC=Solid SC=Solid SC=Solid SC=Solid
Greg Thomas Street Thomas 12/03 Receive	d By/Stored In Date/Tir	ne 3. 1245	(11011am 292), Truum 14	; Garbone 14, Strentinur 89,90	-10ml St Pp 12/2/3	0=0ll A−Air DS=Drom Solids DL=Drom Liquids
	d By/Stored In Date/Tir	ne	en de la companya de La companya de la co			T=Tissue WI=Wipe L=Liquid
Lelinquished By/Removed From Date/Time Received Food FX 13(15(03) 1450	d By/Stored In Date/Tir	ne	Personnel not availat Relinquish samples f	rom 3728		V=Vegetation X=Other
	d By/Stored July Date/Tir	ne	Ref # // on /Z//			
LABORATORY Received By SECTION		Title	2015 (115) 2015 (115)		1	Date/Time
			and the second second			· · · · · · · · · · · · · · · · · · ·

FLUO	R Hanfor	d Inc.		CEN'	TRAL PLATEAU (	CHAIN OF	CUSTO	Y/SAMPL	E ANA	LYSIS RE	QUEST		F03-	025-004	Page 1	ot T Q
Collector	o Dhe	Stell High	S		ny Contact NT, STEVE	Telepho, 373-5	n <b>e No.</b> 689		ŕ	Project Coo TRENT, SJ	rdinator	Price Co	de (	8N		rnaround
Project Designation 200-LW-1/LW-2 (		ation - Soil		Samplii 216-i	ig Location 3-58 (22.5 - 25 ft)					SAF No. F03-025		Air Qua	ality		45	Days
Ice Chest No.	در <i>ه</i>	2501		HA	ogbook No. 2F - N - 3510-1		COA 119143ES	310			L EXPRESS					
Shipped To TM	3.10-78 VICES (For	6-03 Pecro	ي ا	Offsite !	Property No A 84	0 05	9			Bill of Lad	ing/Air Bill	[№] . క్ర	75T	730	•	
POSSIBLE SAMP	LE HAZA	RDS/REMARKS			Preservation	Cool 4C	Cool 4C	Cool 4C	Cool		None		1			
0 1177 111				f	Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/	P			
Special Handling	g and/or S	torage			No. of Container(s)	3	1.	- 3	, 1	1	1	i	71			
					Volume	40mL	120mL	40mL	120n	ıL 250ml	500m	L 500i	7			
		SAMPLE ANAL	.YSIS			VOA - 8260A (TCL)	See item (1) ir Special Instructions.	Aicohols, Glycols, & Ketones - 8015 {I-Butanol, Ethylene glycol}	PCBs -	See item ( Special Instruction	Specia	l Speq	àf			
Sample No		Matrix *	Sampi	e Date	Sample Time											1,452
B17RT8	4	SOIL	12-	7-3	5 10:30	سنت ا								TIGT	0 B17	RVI
	102) 102)										. :					
	0 ( ) 2 4 ( ) 3 10		•				verte s		re	ersonnel not a elinquish sam	ples from 37	28 -			·	
									— R	ef# <u>]/A</u> on <u>/7</u>	<u> </u>	ኔ -				
CHAIN OF PO				n/Print !				CIAL INSTR					·			Matrix *
Relinguished By/Remove	A From Poly Poly Poly Poly Poly Poly Poly Poly	Date/Time	Received Received Received Received Received Received Received	By/Stored By/Stored By/Stored	En Amaridge  En Amaranter  En	ate/Time  to Jule  ate/Time  to Jule  to Time  to Jule  to Time  to Jule  to Time	range (1) 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Jaboratory is to a corganics from the corganics from the corganics from the corganics from the corganic from the corgani	the WTP OA (TCL H-D (To H-Gasoli IOA (Sup (Supertra 0 (Chlor (Soil) - 90	H-D analysis. Sol. (Phenol); Seital petroleum hyne Range - WTiertrace) (Arsenice Add-On) (Adde, Fluoride, No. 145	ni-VOA 82'ddrocarbons 62'H-G ic, Barium, Cantimony, Bery	Comments for 70A (Add-On liesel range, dmium, Chro Ilium, Bismul	or boldin ) {Triba Total pe mium, I th, Cop	ng time issues.  utyl phosphate etroleum hydro  Lead, Selenium per, Nickel}; N  Ammonia - 35	); TPH-carbons -  n, Silver); Mercury -  10.3; Total	S=Soil SE=Sedinicat SO=Solid Sl=Sludge W = Water O=Oil A=Arr DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegelution X=Other
	Received By	by: Red Ex	15	15/0	3 0950 K	ec bu		ms						Da	ite/Time	
FINAL SAMPLE DISPOSITION	Disposal Me				- 1,0- 10				sed By			•		D	ate/Time	

ELUOP Hartond Inc.	CENTRAL PLATEAU CI	HAIN OF CUSTOD	V/SAMDI E ANA	I VSIS DECLIEST	F03-025-005	Page 1 of 1 S
FLUOR Hanford Inc.	Central Plateau Ci	Telephone No.	LIBRIU LE MIN	Project Coordinator		
Sollector 40DC 415NC 1 HI WHO	TRENT, STEVE	373-5689		TRENT, SJ	Price Code 8N	Data Turnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (27.5 - 30 ft)		;	SAF No. F03-025	Air Quality	45 Days
Ice Chest No. ERC 02501	Field Logbook No.	COA 119143ES	10	Method of Shipment FEDERAL EXPRES		
Shipped To TWY 10-29-02 Recra	Offsite Property No. A	040 059	7	Bill of Lading/Air Bil	INO. SEE OF	, <i>د</i>
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C None				
Special Handling and/or Storage	Type of Container	G G/P:				
Special Hadding allows Storage	No. of Container(s)	1 1	:4			
	Volume	250mL 250mL				
SAMPLE ANALYSIS		See item (1) in Special Instructions.				
Sample No. Matrix * Samp	ole Date   Sample Time	170				
	7-3 14:10	$\overline{}$			= TO B17	RUZ
236	, , , , , ,	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				14/
Relinquished By/Removed From Date/Time 16:40 Received CV 10 W16468 27 Physics 127-5 Mag	26 Fridge #1 12-7	The I range	organics from the WTI	pH within 24 hours of sample PH-D analysis. See SAF CO	receipt. The laboratory is to rep C Comments for holding time issu	ttes. S=Soil SE=Sediment SO=Solid
Mosce Ref #1 12/8/03 Gr	og Thomas Bras Thon	12/8/03 (2)_ te/Time	lickel-63; Gamina Spec	NO2/NO3 - 353.2; Sulfides - - Radium (Radium-226, Ru 1; Carbon-14; Strontum-89,9	fium-228), Technotium 90; Isoto 0 - Total Sr RP	O=Oil
Relinquished By/Removed From Date/Time Receive	ed By/Stored In Dat	te/Time			12/2	DL-Drum Lie T-Tissue WI-Wipe L-Liquid
Relinquished By Removed From Date/Time Receive Prodex 19/15/03/0980	rang	a l	rsonnel not available elinquish samples fref # 14 on 12 / 12	om 3/28		V=Vegetation X=Other
Relinquished By/Removed From Date/Time Receiv	ed By/Stored In Dat		Ta The Outer 12			
LABORATORY Received By SECTION		Title				Date/Time
FINAL SAMPLE Disposal Method DISPOSITION		- 1	Disposed By			Date/Time

EL UOR Hanfor	d Inc.	. 13302V LL. XAL	NTRAL PLATEAU C	CHAIN OF	CUSTOD	Y/SAMPL				F	03-025-00	8 Page 1	ot T
Collector HDD H	FOR HUM	S PESITE TR	any Contact ENT, STEVE	Telepho 373-5	ne No. 689			Project Coord TRENT, SJ	linator	Price Code	8N	Data Tu	
Project Designation 200-LW-1/LW-2 Characterize	cation - Soil		ling Location 5-B-58 (97.5 -100 ft)					SAF No. F03-025		Air Qual	ity 🗌	45	Days
ice Chest No. GRC 0	2 501	Field	Loghook No. UF 3561		COA 119143ES	10		Method of Shi FEDERAL I		5			
Shipped To TYD ) EBERLINE SERVICES (Fo		Offsit	te Property No. A	040	059			Bill of Lading	/Air Bill	No. S€	5 03/	><	
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	None								
	_	Ç.	Type of Container	G	G/P								
Special Handling and/or	Storage		No. of Container(s)	1	1								
			Volume	250mL	250mL								
	SAMPLE ANA	LYSIS		See item (1) is Special Instructions.	See Item (2) in Special Instructions.								
Sample No.	Matrix *	Sample Date	Sample Time		10/525						3 10/4		
B17RW4	SOIL	12-10-03	3 1245	X	/					Til	5 70	BITRU	16
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**				<u> </u>		-	<b></b>		-				1-
CHAIN OF POSSESSI	ON	Sign/Dal	nt Names	<u> 1 </u>	enr	CIAL INSTI	DUCTIO	NO.		<u> </u>	<u> </u>		Mai
Relinquished By/Removed From Rolinquished By/Removed Trom LUOC# 100 -02	MINON 12-16-15	Received By/\$te	00 00 00 00 00 00 00 00 00 00 00 00 00	1000	75 The rang	laboratory is to e organics from Chromium Hex	analyze p the WTP - 7196; N	H within 24 hours H-D analysis. Sec O2/NO3 - 353.2; - Radium (Radium	SAF COC Sulfides - 9	Comments for	holding time is ase - 413.1	sues.	S=50il SE=S0 SO=Sc SI=Stu W = W
Polinguished By/Removed From	Vario 17-11-03	D TIKUM 10 Recoved By/Si	<u> </u>	12*11*1 vate/Time 12-11*03	OLO The	vickel-01: 1.500 orium-232); Tr	itium - H3	Carbon 14; Stron	1-220, Kad atium 89,90	Total Sr	Do	2/3	O=Oil A*Air D=2Cl
mymmin barr		Received By/St	ored in D	ate/Time		ersonner no	avanap	e to					T=Tis WI=W L=Liq V=Vo
Relinquished By/Removed From	21203 110	O SJOALS	Iffle 12120			nalinguish or	ammine fr	OH 11/2					
Relinquished By/Removed From KEF 3 15 3 7 7 8   Relinquished By/Removed From S J Cort & J Color (2)	21203 110 Date/Time 1203 119	Received By/SI	ored in D	ate/Time	29.5	Relinquish sa Ref# <u>58</u> on	12/17	<u>103</u>					X=Oth
Relinquished By/Removed From LEF 3 5 3 7 2 8  Relinquished By/Removed From 5 J Cort For Act 12  Relinquished By/Removed From Feld X X	Date/Time  12 03 11 (0)  Pate/Time  Pate/Time  9/15/03 095	Received By/St	ored in D	Pate/Time		Relinquish so Ref# <u>58</u> on	amples fr	<u>103</u>	-		·	Date/Time	
Relinquished By/Removed From Relinquished By/Removed From S J Cort & D A L (2) Relinquished By/Removed From	Date/Time  12 03 11 (9)  Pate/Time  Pate/Time  9/15/03 095	Received By/St	ored In D	Pate/Time	29.5	Relinguish sa Ref# <u>55</u> on	12/17	<u>103</u>				Date/Time	

FLUOR Hanford Inc.	CENT	RAL PLATEAU C	HAIN OI	CUST	rod'	Y/SAMPLI	E ANA	LYSI	S REQU	EST	F03	-025-044	Page <u>1</u>	of 1
Collector JADR 17450 HOUNS	Compan TREN	y Contact T, STEVE	Telepho 373-5					Project TREN	ct Coordii IT, SJ	nator 1	Price Code	8N	Data Tur	
Project Designation 200-LW-1/LW-2 Charactérization - Soil		g Location -58 (22.5 - 25 ft)			: '.			SAF N F03-0		A	Air Quality		45	Days
Ice Chest No. ER C 02 501	Field Lo	gbook No. 1NF - N - 3510-		CO/ 1191	4 43ES	0			od of Ship DERAL EX					
Shipped To TYY151 0-24-03 EDERLINE SERVICES (Formerly TMA)	Offsite F	Property No.	240	05	59			Bill o	f Lading/.	Air Bill No S&Z	). T 03 P	;#		pakanan
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	No	one				-					
Special Handling and/or Storage		Type of Container	G _:	G	/P /									
		No. of Container(s)	1 .		1		-							
		Volume	250mL	250	)mL									
SAMPLE ANALYSIS			See item (1) I Special Instructions	Spe	(2) in clial ctions.									
Sample No. Matrix * Sa	nple Date	Sample Time			S. G.					S. J. S. B.				
	-7-5		X	1/			100000000	33.45.05.81.60			70=	700 /	ノフペレ	77
									······································			<u> </u>		
					<del></del>				····			ļ		
CHAIN OF POSSESSION	Sign/Print l	Nomas	<u> </u>		CDE	NA PAIGE	LOTY	ONS	··-			1	<u> </u>	Matrix *
Relinquished By/Removed From  Relinquished By/Removed From  Date/Time  15:00 Rec  Relinquished By/Removed From  Date/Time  13:00 Rec	ived By/Stored	ila Da Der RmA Fridge	ite/Time 1	300 330	The large	organics from	analyze the WTI - 7196; l	pH within PH-D and NO2/NO	alysis. See 3 3 - 353.2; Se	SAF COC C	eipt. The labora omments for hole 0; Oil & Grease	ding time issue - 413.1	s.	S=Soil SE=Sediment SO=Solid SI=Stutge
Retinguish du Dy Romer ved Frida Date Time 12-03 Rec	nyonar ived By/Stose	# 2 D 9-	os 14	30	(2 <del>)-1</del> {Tho	Helcol. 63; Chm rium=252); Tri	ma-Spec thinr = 11	-Radhii 3-Carbo	in (Radium- n-14 <del>; Stront</del> i	226, Radion uin-89,90	Total &	12/	2/3	W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Reinquished By/Removed From Date/Time 1000 Rec 101-#2 mb 020 Date/Time 1000 Rec	nwii	hisan anth	nte/Time NSUD    nte/Time	1000 133 1010	Per	sonnel not a	wailahl	la to					•	WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From Date/Time Rec	ived By/Store 1 + P ived By/Store	d In 2/205 1/0	<u> </u>	<u>さ</u>	Re	linquish san f# <u>/H</u> on <u>f</u>	ples fr	om 3729	8	·				
LABORATORY Received By	=00 ex  15 6		c.by	Fitle	Der	m	·.	·					Date/Time	<u></u>
FINAL SAMPLE Disposal Method DISPOSITION	,				<u> </u>		osed By						Date/Time	

# Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: THU-

Date:

Purchase Order / Project# /
SAF# / SOW# / Release #: F03 -02.5

LvLI Batch #:

03/21369

Sample Custodian:

	NOTE: EX	PLAIN ALL I	DISCREPANCI	ES O
1.	Samples Hand Delivered or Shipped	Carrier /	Fel E	Airbill# 79238938 83
2.	Custody seals on coolers or shipping container intact, signed and dated?	□xes	□ No	□ No Seals Comments
3.	Outside of coolers or shipping containers are free from damage?	☐ Yes	□ No	
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	₽Yes	□ No	
5.	Samples received cooled or ambient?	Temp /	,5 °C	Cooler # ERC - 02 - 501
6.	Custody seals on sample containers intact, signed and dated?	Yes	□ No ¹	□ No Seals
7.	coc signed and dated?	☐ Yes	□ No →	
8.	Sample containers are intact?	- □ Yes	□ No	
9.	All samples on coc received? All samples received on coc?	□ Yes	□ No	
10.	All sample label information matches coc?	Ľ Yes	□ No	
11.	Samples properly preserved?	Ves	□ No	
12.	Samples received within hold times? Short holds taken to wet lab?	El Yes	□ No	
13.	VOA, TOC, TOX free of headspace?	□ Yes	□ No	<b>⊿</b> N/A
14.	QC stickers placed on bottles designated by client?	☐ Yes	□ No	IZ N/A
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	1 Yes	□ No	
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	□ Yes	□ No	曰 No Discrepancies



# Lionville Laboratory, Inc. HBGX ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-025 H2461

DATE RECEIVED: 12/15/03

LVL LOT # :0312L369

	1	•			
CLIENT ID	LVL #	MTX PREP #	COLLECTION	EXTR/PREP	ANALYSIS
	<u> </u>				
B17RY5	001	S 03LE1654	12/05/03	12/19/03	12/31/03
B17RY5	001 MS	S 03LE1654	12/05/03	12/19/03	12/31/03
B17RY5	001 MSD	S 03LE1654	12/05/03	12/19/03	12/31/03
LAB QC:					
			A Company		
PBLKTM	MB1	S 03LE1654	N/A	12/19/03	12/31/03
PBLKTM	MB1 BS	S 03LE1654	N/A	12/19/03	12/31/03



### **Analytical Report**

Client: TNU HANFORD F03-025

LVL#: 0312L369

SDG/SAF#: H2461/F03-025

W.O.#: 11343-606-001-9999-00 Date Received: 12-15-2003

## HERBICIDE

One (1) soil sample was collected on 12-05-2003.

The sample and its associated QC samples were extracted on 12-19-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 12-31-2003. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The required holding time for extraction and analysis was met.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. All blank spike recoveries were within acceptance criteria.
- 6. Eleven (11) of sixteen (16) matrix spike recoveries were outside acceptance criteria; however, all blank spike recoveries were within criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. Confirmation was not required because target compounds were not detected in the sample.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\herb\tnu\0312-369 doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 4 pages.

02

Libity the Laboratory (	bample Discrepancy Nep	SDR#: OCOZ
Initiator TRICKINK	Batch: (PV) 75349 U	DU Porometon Horr
Olletti. 1110	SVO40/MICAVVV/CLP/	Teb parcin 36.02-1.03 6.00
1° Péason for SDP		
	file Error Client Request	Sampler Error on C-O-C
Transcrip		Other
b. General Discrepancy	Method SW846/MCAWW/CLPI Prep Batch OSCIOST, OSCIOSTA COC Discrepancy _ Tech Profile Error _ Client Request _ Sampler Error on C-O-C _ Transcription Error _ Wrong Test Code _ Other _ General Discrepancy _ Missing Sample/Extract _ Container Broken _ Wrong Sample Pulled _ Label ID's Illegible _ Hold Time Exceeded _ Insufficient Sample* _ Preservation Wrong _ Received Past Hold _ Improper Bottle Type _ Not Amenable to Analysis _ Ote*: Verified by [Log-In] or [Prep Group] (circle)signature/date: _ Problem (Include all relevant specific results; attach data if necessary)	
	2	
		ervation Wrong Received Past Hold
· · · · · · · · · · · · · · · · ·		
c. Problem (Include all relevant spec	citic results; attach data it necessary) *	102/102/102/102/102/102/102/102/102/102/
ZC-mi neinsD-bws	ていっとれ ノジーマいつ	S(13/E16/LI/AC RED)ACTO
UNITERS MEIMEN-SUES	01/00/000000 105-4200	inted BS/BSDCXEVOR
OIL +OURS TECOPES 165	net critica:	
NATOLE_		
2. Known or Probable Causes(s)	NAHIX	
	Other Description	
	other Description:	
	en e	
		a vall
	R	
Change Test Code to	$ \mathcal{U}$	
	· Maleuri No	
4. Project Manager Instructionssig	gnature/date:	1/15/04
Concur with Proposed Action	See Instruction	
Include in Case Narrative	See Histraction	
5. Final Actionsignature/date:	other E	xplanation:
✓ vermed re-lingilieacification in Case Narrative	gestilatialities (Circle)	
Hard Copy COC Revised		
Electronic COC Revised		
EDD Corrections Completed		
	ded, forward original to QA Special	ist for distribution and filing.
Route Distribution of Completed SD		tribution of Completed SDR
X Initiator X Lab General Manager_M.		Metals: Beegle
X Project Mgr. Stone/Johnson	on/Haslett 2	Inorganic: Perrone GC/LO: Kiger
X Technical Mgr. Wesson/D	aniels	MS: Rychlak/Layman
XQA (file): Alberts		Log-in: Melnic
Data Management: Feldm Sample Prep: Beegle/Kige	Idit	Admin: Soos Other:

QA-105-A-0801



### GLOSSARY OF HERBICIDE DATA

# DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- T = Interference.

## **ABBREVIATIONS**

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- **BSD** = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- **SP** = Indicates Spiked Compound.



## GLOSSARY OF HERBICIDE DATA

- This flag is used for an Herbicide target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by HPLC.

# Lionville Laboratory, Inc.

Herbicides, Special List Report Date: 0
Client: TNUHANFORD F03-025 H2461 Work Order: 11343606001 Page: 1

RFW Batch Number: 0312L369 PBLKTM BS **B17RY5** PBLKTM **B17RY5** Cust ID: B17RY5 03LE1654-MB1 001 MSD 03LE1654-MB1 001 001 MS RFW#: Sample SOIL SOIL SOIL SOIL Information Matrix: SOIL 1.00 1.00 1.00 1.00 D.F.: 1.00 ug/kg ug/kg ug/kg Units: ug/kg ug/kg 112 8 47 61. 8 33 DCAA 47 % Surrogate: 92 170 U 34 * % 170 U 44 * % Dalapon 38 * % 67 U 116 ์ 69 🗓 27 * % Dicamba 111 47 * % 170 U 170 "ט' 33 * % ; Dichloroprop 120 33 Ü 30 * % 45 35 U 2.4-D 17 IJ 110 47. 55 2,4,5-TP (Silvex) 17 U 122 33 * % 48 * % 17 U 17 Ü 2,4,5-T 52 * % 170 U 134 31 * % 170 U 2,4-DB 88 17 U 56 .17 U 52 Dinoseb

Report Date: 01/15/04 10:4%

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Labo	ratory l	Jse Only	usto	dy Tran	sfe	(b) er l	¶0≱ Rece	BNA ord/L	۹/۸ ' <b>ab.</b> '	გ / Wo	fan Irk	الم Re	d) e <b>q</b> u	ار es	t P	N√U age_	Λ <u>/</u> ο	f	•		3		1	
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Project Conta	act/Pho	ne #		· ·			Volume		Liquid							**		J						- 10 T
Lionville Lab	oratory	Project Manage	r <u> </u>	Johnson		· · · · · · · · · · · · · · · · · · ·	rojania		Solld	40		60	60	120	120	40	250	50D	-1	101	250	-1	3.3.	- 18 - 61 - 18 - 61
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MATRIX CODES: S - Soll SE - Sediment SO - Solid	Lab ID	Cile	ent ID/Descrij	tion	Cinc (	Cosen	Matrix	Date Collected	Time Collected	H+290		0608 H	OHBGX	орсв	0625 X	18415 06 CS C	Mc TO	ZC/NO	12432 1101		ICAL EN382	ISFD FOGGR		
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O - OII A - Air	002	B17R73				<del> </del>	<u> </u>	12/6/03		1		Ė	1	<del>                                     </del>	1		1		1	<u> </u>	1	1		
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L - EP/TCLP Leachate	005	BITRUS				<del>                                     </del>		1.	140			<del> </del>	1	<u> </u>	<b>†</b>		1	+	<del>                                     </del>	<del>                                     </del>	1	1		
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M€T ①:  IC ②:-	Rus RCRI CI. F	Matrix  1 + Sb. Be. E  , NO, , NOz.  Received	<u>م</u> د	<b>/</b>	lellnqu	İshed	19-03	23456Received	1 08			- 00 S	Disa		cies Be		- H	land De Arbill # 2) Ambil 3) Rece Condition	ent or C	_ or	75 11 P 22 P 3 S C C	amper Res Preser ackage Unbrol ackage Preser Unbrol ample COC Rec	sistant Seat on Ou Y or ken on C Y or nt on Sa Y or ken on Y or cord Pre	uter N Outer N ample r N N
Cod Co.	- 1	1Perry	12/5/03	1950	þу			by <b>O</b> E	NDIS	\$			Sar	nples L	abels a ord? Y	nd		5) Rece Holding	wed Wi			ooler	mpie He Y oi	
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FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS					LYSIS REQU	JEST	F0	3-025-001	Page I	of <u>1</u>	
Collector POPE / PFISTER / Hughes	Compan TREN	y Contact T, STEVE	Telepho 373-5	ne No. 689			Project Coord TRENT, SJ	inator	Price Code	8N		rnaround
Project Designation 200-LW-1/LW-2 Characterization - Soil		g Location 3-58 (0.5 ft)					SAF No. F03-025	•	Air Qualit	у 🗌	45	Days
Ice Chest No. ERC 02 50/	Field Lo	gbook No.		COA 119143ES	10		Method of Shi FEDERAL I	pment XPRESS				
Shipped To 1971 10-29-03 EBERLINE SERVICES (Formerly TMA)	Offsite I	Property No.	A04	005	9		Bill of Lading	/Air Bill	No. 5E	E OUF	[°] د	
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	Cool 4C							Maria and San San San San San San San San San San	
		Type of Container	aG	aG								
Special Handling and/or Storage	<u> </u>	No. of Container(s)	ı į	1		<u> </u>						
		Volume	60mL	60mL						· .		
SAMPLE ANALYSIS	· · · · · · · · · · · · · · · · · · ·		Pesticides - 8081	Chloro- Herbicides - EPA8151								
	mple Date	Sample Time	a compa	79 PA (\$10)		200 B		101-927				
	-5-3	15:00			J.S.C.			71	ETO	B 17/	RY6	ļ <u></u>
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					<u> </u>			ļ				
CHAIN OF POSSESSION	Sign/Print N	Vames	<u> </u>	SPEC	IAL INSTR	i Metic	INS	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Matrix *
Relinquished By/Removed From Date/Time 1230 Rec  MO-026 Fridge #1 12/8/03 Relinquished By/Removed From Date/Time 1245 Rec  Gree Thomas Described By/Removed From 12/8/03	ived By/Stored O-O26 ived By/Stored ived By/Stored	In Da Fridge #1 12 In Da was x tooy than In Da Da Cale 11	te/Time	:00 1230 3/03 47 Per	sonnel not a linguish sam	vailable	to m 3728					S=Soll SE=Sediment SO=Solid Si=Sindge W = Water O=Oil A=Air DS=Drum Solids DI=Drum Liquids T=Tissue
5 J6A(EM) 12-12-03  Relinquished By/Removed From Date/Time PORE V 15/15/03 0950	eived By/Stored	In Da	ste/Time	Re	# <u>/A</u> on <u>/</u>	<u> </u>	103					WI=Wipe L=Liquid V=Vegetation X=Other
	eived By/Stoydd	Da Da	ite/Fime		· · · · · · · · · · · · · · · · · · ·						· .	
LABORATORY Received By SECTION			T	tle						Ē	Pate/Time	
FINAL SAMPLE Disposal Method DISPOSITION					Dispo	osed By					Date/Time	

FLUOR Hanford Inc.	CENTRAL PLATEAU C	HAIN OF C	CUSTODY/SAMPI	LE ANA			F03-025-003		Page 1	1 10
Collector 1000 DESTO HUGHES	Company Contact TRENT, STEVE	Telephone 373-5689			Project Coord TRENT, SJ	inator	Price Code	8N	Data Ti	
Project Designation 200-LW-I/LW-2 Characterization - Soil	Sampling Location 216-B-58 (17.5 - 20 ft)				SAF No. F03-025		Air Qualit	у 🗀	45	Days
Ice Chest No. ERC 02 - 501	Field Logbook No.		COA 119143ES10		Method of Shi FEDERAL I	pment EXPRESS				
Shipped To 100-29-93 Recra	Offsite Property No. AO	40 C	59		Bill of Lading	/Air Bill	No. Se	5 08	>	
POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	None	, ,						
Special Handling and/or Storage	Type of Container	G	G/P							
Special Manufing and Storage	No. of Container(s)	1	1/							
	Volume	250mL	250mL							
SAMPLE ANALYSIS		Special	co iterii (2) in Special Instructions							
Sample No. 3, 1, 2, Matrix * Sam	ole Date Sample Time					9.89			407 (577)	
B17RT3 SOIL /2-	6-3 15:45	- /					776	70	1317	2%
B17RT6 SOIL (2	-6-3 15:45					,	716	70	3170	中厂
\$1.00 mm			1.41							
	gn/Print Names	, .	SPECIAL INSTI	RUCTIO	NS	-		·		Mat
		-3 /800	The laboratory is to range organics from	analyze p	H within 24 hours of H-D analysis. See	f sample re SAF COC	eccipt. The labora Comments for hol	tory is to report ding time issues	kerosene	S=Soil SE=Soi
telinquished By/Removed From Date/Time 1230 Received	ed By/Stored In / Date	/Time /236		- 7196; N	O2/NO3 - 353.2; S	ılfides • 90	30; Oil & Grease	- 413.1		SO=Soi S1=Shu
MO-026Fr/19+ #2 12/8/03 Gre Relinquished By/Removed From Date/Time /245 Receive Greg Thermas Line Thomas 12/8/03		e/Time	{Phorium-232}; Tri	ma Spee dum - 113	-Radium (Radium Garben-14; Strent	136; Radiu um 89,90	m-228): Technoti Total Sr	1117-99; Isotopia 12/2/3	Thorism:	W = W O=Oil A=Air DS=Dr
elinguished By/Removed From Date/Time Receive		/ 1245 e/Time	5				, ,	· •		Di.≖Dn T≖Tissı Wi≖Wi
		e/Time	Personnel not Relinquish sa	unples fr	om 3728					L=Liqu V=Vega X=Othe
		-/Time	— Ref # <u>//}</u> on_	<u> </u>	<u>-/_03</u> .			7		
LABORATORY Received By SECTION		Title		1.1				D	ate/Time	1

FLUOR Hanfor	d Inc.		ENTRAL PLATEAU	F03-025-004	4 Page 1 of 1								
Collector + D +	Stell 179h		Company Contact Telephone No. TRENT, STEVE 373-5689						inator	Price Cod	le 8N		ırnaround
Project Designation 200-LW-1/LW-2 Characteriz	ration - Soil	Sa	mpling Location 216-B-58 (22.5 - 25 ft)			SAF No. F03-025		Air Quality 📋		45 Days			
Ice Chest No.	2501		ld Logbook No.		COA 119143E	S10		Method of Ship FEDERAL E	XPRESS				
Shipped To 1170 10-70	8-03 POCY	a or	Offsite Property No A040 059					Bill of Lading					
POSSIBLE SAMPLE HAZA	ARDS/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Cool	.	None		1		
Special Handling and/or S	Storago		Type of Container	aGs*	aG	Gs*	aG	G/P	G/P	G/F	·/		
Special Manufing and/or S	otorage		No. of Container(s)	3	ı	3	. 1	1	. 1	1	7		
			Volume	40mL	120mL	40mL	120	nL 250mL	500m	iL 500ir	<i>f</i>		
#4.	SAMPLE ANAI	LYSIS		VOA - 8260A (TCL)	See item (1) i Special Instructions	Glycols, &	PCBs -	8082 See item (2) in Special Instructions.	See item ( Specie Instructi	il Spegi	al		
Sample No.	Matrix *	Sample Da	te Sample Time										
B17RT8	SOIL	12-7						-		_/_	TIGT	U B17	RVI
			1 2 4										
							10	ersonnel not ava elinquish samples ef # 1 A on 12	from 37	728 - 3 -			
CHAIN OF POSSESSIO		Sign/P	rint Names			CIAL INSTR			<u> </u>	·			Matrix *
Relinquished By/Removed From Stre Toner KMA F Relinquished By/Removed From From Stre Toner KMA F Relinquished By/Removed From Comparished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	Date/Time 1600	Received By/  Received By/  Received By/  Received By/	Stored In Gridge  Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored In Stored I	143	780 (1) Dies kero (2) ICP 747 (3) (3) Cya	laboratory is to the organics from Semi-VOA - 82 tel Range - WTF ICP Metals - 60 Metals - 6010A i - (CV)	analyze p the WTP 70A (TCI PH-D {To PH-Gasoli 10A (Sup (Supertra .0 {Chlor (Soil) - 9	old within 24 hours of H-D analysis. See St. (Phenol); Semi-Vatal petroleum hydrone Range - WTPH-tertrace) (Arsenic, Eace Add-On) (Antinide, Fluoride, Nitrat 045	SAF COC /OA 82 carbons 63 Barium, Ca nony, Bery c, Nitrite,	Conunents for 70A (Add-On) diesel range, T dmium, Chron dlium, Bismuth	boratory is to report holding time issues (Tributyl phosphatotal petroleum hydranium, Lead, Selenium, Copper, Nickel); Ifate); Ammonia - 3	e}; TPH- ocarbons - n, Silver}; Mercury -	S=Soll SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Drum Solids DI=Prum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
LABORATORY Received By SECTION	by: Fred Ex	x 13/15	103 0950 K	ec by	: IPC	ms							
FINAL SAMPLE Disposal Model Disposition							osed By					Date/Time	

FLUOR Hanford Inc.			CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUE								F03-025-005	05 Page 1 of	
Project Designation 200-LW-1/LW-2 Characterization - Soil  Ice Chest No. ERC 0 Z 501			Company Contact   Telephone No.   TRENT, STEVE   373-5689     Sampling Location   216-B-58 (27.5 - 30 ft)					Project Coordinator TRENT, SJ SAF No. F03-025		Price Co	de 8N		
										Air Qua	ality 🗌	45	Days
			Field Logbook No. CO.			10		Method of Ship FEDERAL E	XPRESS				
Shipped To Type 100 EBERLINE SERVICES (Fu	29-02 Recra	Offsit	e Property No.	7040	059	7		Bill of Lading	Air Bill	^{No.} 5∈	EOSP	_	
POSSIBLE SAMPLE HAZA	ARDS/REMARKS		Preservation	Cool 4C	None								
	••		Type of Container	G	G/P								
Special Handling and/or S	storage		No. of Container(s)	1	1						· ·		
		•	Volume	250mL	250 nE								<b> </b>
	SAMPLE ANALY	/SIS		See item (1) in Special Instructions.	Secial								
- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10				:	32/3/3								
Sample No.	Matrix *	Sample Date	Sample Time	(10 m)	W. Sel	14.000							
B17RV5	SOIL	12-7-	3 14:10	X	1				71	TI	B17	RUZ	
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· · · · · · · · · · · · · · · · · · ·													
CHAIN OF POSSESSIO		Sign/Prin				CIAL INSTR							Matr
Relinquished By/Removed From	Date/Time 16:40	mo 026 F	dge#1 12-	)ate/Time 7-3/16.	range	organics from	the WTF	H-D analysis. See	SAF COC	Comments f	laboratory is to repo or holding time issu		S=Soli SE=Sodi SO=Soli
Relinquished By/Removed From MOSCL Ref #1	Date/Time /230 /2/8/03	Received By/Sto	umas Dros The	mo 12/	لا (2) ادرا <i>ر صا</i>	lickel 03; Gam	ma Spec	O2/NO3 - 353.2; S - Radium (Radium	226; Kadi	un-228), Te	irease - 413.1 <del>chnotium 99; Isoto</del> r	ie Thorium	St≃Stud, W = Wa O=Oil
Relinquished By/Remover/From	Date/Time /245	Received By/Sto		Date/Time	į į		ttuiii + F13	; Carbon-14; Stron	101n-89,90	Totar or	RP 12/2	3	A=Alr DS=Dra DL=Dra
Relinquished By/Removed From	Date/Time	Received By/Sto	red In D	Pate/Time	# ******. * ****************************	1.65		· · · · · · · · · · · · · · · · · · ·			*		T=Tissi WI=Wi _j L=Liqui
Relinquished By/Removed From	5103 0950	Received By/Sto	red in E	Date/Time	l 6	rsonnel not a	noles fr	om 3728					V=Vege X=Orlic
Relinquished By/Removed From	Date/Time	Received By/Ste	ryd In E	Date/Time	R	ef# <u>1A</u> on I	- 11-	122					
LABORATORY Received E SECTION	y			Т	itle							Date/Time	
FINAL SAMPLE Disposal N	lethod					Dispo	osed By	·.				Date/Time	

Collector D	anford Inc.	Compa	TRAL PLATEAU ( ny Contact NT, STEVE	Telephor	ie No.				Coordin	arar	rice Code	-025-008 8N	Data Tu	rnaroun
Project Designation 200-LW-1/LW-2 Char	acterization - Soil	Sampli	ng Location B-58 (97.5 -100 ft)	,				SAF No F03-025	•	A	ir Quality		45	Days
ice Chest No. & 12.	02 501	Field L	oghook No. F 356 1		COA 119143ES	10		FEDE	of Shipn RAL EX	PRESS				
Shipped To TY	15 10-19-03 Para (Formerly TMA)	Offsite	Property No.	040	059			Bill of I	Lading/A	ir Bill No.	5లక	037		
	HAZARDS/REMARKS		Preservation	Cool 4C	None	1								
e i i i i i i i i i i i i i i i i i i i	31 64	· ·	Type of Container	G	G/P					-				1
Special Handling an	d/or Storage		No. of Container(s)	1	1									
			Volume	250mL	250mL				-					1
				See item (1) in Special Instructions,	Special:									
	SAMPLE ANA	LYSIS		instructions,	Instructions,									
Sample No.	Matrix *	Sample Date	Sample Time		1 7									1 2 6 8
B17RW4	soil.	12-10-03	<del></del>	X	)					en lastik kalabatan	TIE	70 B	17 Ru	16
1														
				<u> </u>										
				-		ļ	1				<u> </u>	ļ		
CHAIN OF POSS	ESSION	Sign/Print	Names	1	enr	CIAL INSTI	DIVOTE	2215			<u> </u>	<u> </u>	<u> </u>	ļ
Relinquished By/Removed F	Date/Time 15 2007/10/10/20/10/10/10/10/10/10/10/10/10/10/10/10/10	Received By/Store  Received By/Store	2 # 1 mo 026 2	7 (09)3 Pate/Time 1 2 12 11 (	75 The range (1) (2) (2) (7)	aboratory is to corganics from Diromium Hex Nickel-63: Gam rium-232): Tri	analyze p the WTP - 7196; N	oH within 2 PH-D analys VO2/NO3 -	sis. See S <i>i</i> 353.2; Sul <del>Radium-2</del> :	AF COC Cor fides - 9030;	mments for hole Oil & Grease	ding time issue - 413.1	es.	Matrix S=Soil SE=Sedimo SO=Solid SI=Sludge W = Water O=Oil
Relinquished By/Removed F	Date/Time II	Received By/Store		12-11-03 pate/Time	010				•		K	P 12/2	/3	A=Air DS=Dram : DL=Dram T=Tissue
Relinquished By/Removed F S J 6 W L F O / J Ch	8 121203 110	Received By/Store	MH 121203	S 1100 rate/Time		ersonner nor Relinguish sa tef#33 on	amples fr	rom 3728						W1=Wipe L=Liquid V=Vegetati X=Other
Relinquished By/Removed F		Received By/Store		ate/Time								-	- 4	
	eived By	1 7/ 4.	1	Ti	tle	1	:						Date/Time	
	posal Method		<u> </u>			Dien	osed By	<del></del>		<del></del>	· · · · · · · · · · · · · · · · · · ·		Date/Time	<del></del>

FLUOR Hanford Inc.	CENTRA	L PLATEAU C	HAIN OF	CUST	ODY	Y/SAMPLE	ANA:	LYSI	S REQU	EST	F03-	025-044	Page 1	of <u>1</u>
Collector JADR 1795 HOUNS	Company Contact Telephone No. TRENT, STEVE 373-5689							Project Coordinator TRENT, SJ			Price Code 8N		Data Tur	naround Days
Project Designation 200-LW-1/LW-2 Characterization - Soil	Sampling Location 216-B-58 (22.5 - 25 ft)					•	SAF No. F03-025			Air Quality 🗌 45			Jays	
Ice Chest No. ER C 02 501	Field Logboo	ok No. F • N • 3566-	1	COA 11914		0			od of Ship DERAL E					
Shipped To 177510-24-03 RECEA	Offsite Prope	erty No.	240	05	9			Bill o	f Lading/	Air Bill No ふど	- 03 PC			-4
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	No	ne									
Special Handling and/or Storage	Тур	e of Container	G	G/	P								·	
Special Handling and G. G. G. G. G. G. G. G. G. G. G. G. G.	No.	of Container(s)	. 1	1										
		Volume	250mL	250	nt.									
SAMPLE ANALYSIS			See item (1) in Special Instructions.	See item Spec Instru	ial			-	.* <b>-</b>					
Sample No. Matrix * Sar	ıple Date	Sample Time											Transfer	
B17RV2 SOIL /2	-7-3	10:30	X	<del>//</del>						ļ	1700	700 5	1781	<del>[/ </del>
			- 3	<del>                                     </del>						<u> </u>				
		,												Nation 8
Relinquished By/Removed Frbm Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In D											S=Soli SE=Sodiment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissaa WI=Wipe L=Liquid V=Vegetation			
LARORATORY Received By	114/152	0950 Re		Title	De i	111						. 1	Date/Time	
SECTION Red by Red X 13  FINAL SAMPLE Disposal Method DISPOSITION	115 (0)	UNSU KE	c.uq		W.	Dispo	sed By						Date/Time	

# Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

HANFORD CLIENT: TNU-

Date:

Purchase Order / Project# /
SAF# / SOW# / Release #: F03 -02-5

LvLI Batch #:

03/21369

Sample Custodian:

	NOTE: EXI	PLAIN ALL D	ISCREPANCII	ES .	
1.	Samples Hand Delivered or Shipped	Carrier /	Ed &	Airbill# 7%	23893882
2.	Custody seals on coolers or shipping container intact, signed and dated?	□yes	□ No	□ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☐ Yes	□ No		•
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	Yes	□ No		
5.	Samples received cooled or ambient?	Temp 1	5′ °c	Cooler # EA	c-02-501
6.	Custody seals on sample containers intact, signed and dated?	Yes	□ Ne ¹	□ No Seals	
7.	coc signed and dated?	∐ Yes	□ No		
8.	Sample containers are intact?	- D/Yes	□ No		
9.	All samples on coc received? All samples received on coc?	□ Yes	□ No		
10.	All sample label information matches coc?	Ľ Yes	□ No		
11.	Samples properly preserved?	□ Yes	□ No		
12.	Samples received within hold times? Short holds taken to wet lab?	E Yes	□ No		
13.	VOA, TOC, TOX free of headspace?	□ Yes	□ No	NA	
14.	QC stickers placed on bottles designated by client?	☐ Yes	□ No	EZ N/A	
15.	Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)	Yes	□ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	□ Yes	□ No	⊟ No Discrepancies	